DOCUMENT RESUME

ED 196 045 CS 206 054

TITLE	An Evaluative Study of the Hawai'i English Program.
INSTITUTION	NCMOS Inst., Berkeley, Calif.
SPONS AGENCY	Hawaii State Dept. of Education, Honolulu.
PUB DATE	Jun 77
CONTRACT	6691
NOTE	272p.
EDRS PRICE	MF01/PC11 Plus Postage.
DESCRIPTORS	*Academic Achievement; Educational Research; Elementary Education; *English Curriculum; Grade 5; *Language Arts; *Language Skills; Parent Attitudes; *Program Evaluation; Student Attitudes; Teacher Attitudes; Verbal Ability
IDENTIFIERS	*Hawaii English Program

ABSTRACT

The final report of a year-long study of the Hawaii English Program (HEP), a comprehensive language arts curriculum for the elementary grades, comparing the performance level in English of pupils in fifth-grade HEP and non-HEP classes and investigating the attitudes of pupils, teachers, and parents is presented in this volume. Sections in the report discuss the background of the HEP program and methods used in the research and present results (including 156 tables of statistics). The summary indicates that, in general, the pupils in the HEP classes perform at a higher level in the English language than do comparable pupils in non-HEP classes. (MKM)

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An Evaluative Study of the Hawai'i English Program

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SYNOPSIS

OF THE FINAL REPORT:

AN EVALUATIVE STUDY OF

THE HAWAI'I ENGLISH PROGRAM

June, 1977

Performed Under
Contract No. 6691 with the
Hawai'i State Department
of Education.

1117 VIRGINIA, BERKELEY, CALIFORNIA 94702 (415) 524-0138 / 939 McCULLY, HONOLULU, HAWAII 96814 (808) 946-6339

SYNOPSIS: AN EVALUATIVE STUDY OF THE HAWAI'I ENGLISH PROGRAM

OVERVIEW

This synopsis is a condensation of the final report of a year-long study of the Hawai'i English Program (HEP). The primary purpose of the study was to compare the performance level in English of pupils in fifth-grade HEP and non-HEP classes. The attitudes of pupils, teachers, and parents were also investigated.

The Hawai'i English Program is a comprehensive language arts curriculum for the elementary grades. It was developed in Hawai'i over a period of five years through the cooperative efforts of the Hawai'i Department of Education and the University of Hawai'i. It has won a number of awards and has been adopted by several school systems outside the state of Hawai'i.

This study employed a stratified, modified single-stage, cluster sample of 32 HEP and non-HEP classes on O'ahu. The selection of schools, and classes within schools, was carefully randomized to guard against bias in the sampling procedures.

The performance level of pupils was assessed by tests of language skills, literature, functional literacy, speaking-listening, spelling, and language systems. Some tests were group-administered and others were individually-administered. Attitude measures were obtained from pupils, teachers, and parents with interviews and questionnaires. HEP classroom procedures were observed to assess "degree-of-implementation".

Trained examiners and interviewers were used to collect the data. Teams of examiners/interviewers visited the sample classes during two data-collection periods; the first in October and November of 1976 and the second in April and May of 1977.

In general, the results indicate that pupils in the HEP classes perform at a higher level in the English language than do comparable pupils in non-HEP classes. These differences are most evident in the Reading Comprehension Sub-test of the Language Skills Test. The single exception to this trend was in the test on Language Systems. Both teachers and parents express generally favorable attitudes towards the HEP curriculum. Pupils' opinions of their language arts program, both HEP and non-HEP, were positive though non-HEP pupils were slightly more favorable.

BACKGROUND

The Hawai'i English Program was initiated in May, 1966 as a federally-funded, joint activity of the Department of Education and the University of Hawai'i. It has three major sub-programs: Language Skills, Language Systems, and Literature. Materials development for grades K-3 was completed during the 1969-70 school year and for grades 4-6 in the next year (1970-71). By the 1973-74 school year approximately 57% of all K-6 pupils in Hawai'i were in HEP classes. It is estimated that the materials-cost per pupil/per year has been about $32.

Several evaluation studies of HEP have previously been conducted. These studies have varied in scope and sophistication. The results of these studies have, in summary, favored HEP when compared to non-HEP classes.

The HEP curriculum has won a number of awards and has been adopted on a pilot basis in a number of school systems on the mainland and in the Pacific.

METHODS

The study is based on a stratified random, modified single-stage, cluster sample of 32 fifth-grade HEP and non-HEP classrooms on O'ahu.

Data were collected during two periods in the 1976-77 school year, the first between October and February and the second between March and May. The data were collected by trained examiners and interviewers rather than school personnel.

The tests and other instruments were developed specifically for this study to reflect the language arts objectives of Hawai'i's schools. Commercial standardized tests were not employed. Some of the tests were individually-administered and others were group-administered. The following instruments were used in this study:

1. Language Skills Test
2. Literature Test
3. Speaking and Listening Test
4. Functional Literacy Test
5. Language Systems Test
6. Student Attitude Questionnaire
7. Teacher Attitude Questionnaire
8. Parent Attitude Questionnaire
9. Classroom Observation Schedule
10. Student Interview Guide
11. Teacher Interview Guide

Since socio-economic status is such a strong correlate of both educational achievement and attitude measures, and since the HEP classes tend to serve pupils of somewhat lower socio-economic status, the analyses include adjustments for these differences. Generally, the analysis of achievement compares the performance of pupils in HEP and non-HEP classrooms. The questionnaires and interviews are used to investigate pupil, teacher, and parent attitudes toward the language arts programs. HEP classes were observed directly twice to document "degree-of-implementation".

FINDINGS

Each measure was item-analyzed and tested for reliability. In general (though there are exceptions) the measures were judged to be adequate for the purposes of this study.

Summary of Achievement Test Results

A summary of the results of achievement testing is given in Table 1. These results do not represent significance tests of null hypotheses, but rather best estimates of the confidence to be placed on the observed differences in HEP and non-HEP averages. These estimates are based on analysis-of-covariance adjustments for group differences in socio-economic status. The intent is to focus on educational rather than statistical significance.

TABLE 1

SUMMARY OF ACHIEVEMENT TEST RESULTS

Test	Group With The Larger Average Score[1]	Adjusted Group Means		Probability That The Difference Is Due Only To Chance[2]
		HEP	NHEP	
Language Skills	HEP	24.49	23.36	.02
Literature	HEP	13.76	13.39	.28
Functional Literacy	HEP	14.05	13.56	.20
Speaking & Listening	HEP	38.67	37.46	.28
Spelling	HEP	3.44	3.02	.26
Oral Sentence & Paragraph Reading	HEP	13.17	13.14	.97
Language Systems	Non-HEP	24.64	25.65	.04

(1) Adjusted for differences in SES.

(2) Approximate

With the exception of Language Systems, it seems evident that pupils in HEP classes perform at a higher level than those in non-HEP classes. We see no reason that these results should not be attributed to the HEP curriculum.

Findings From Attitude Measures

The attitudes of the fifth-grade pupils in this sample toward their language arts programs (both HEP and non-HEP) are generally favorable. However, non-HEP pupils express a somewhat more positive opinion than HEP pupils. These results were found in both questionnaire and interview data.

Teacher attitudes may be summarized by these statements:

(a) HEP teachers generally like the curriculum better than the non-HEP curriculum. They tend to like it more the longer they use it.

(b) HEP teachers generally like the variety of materials, individualization, and student involvement in HEP.

(c) They think the HEP program is fairly successful with most students.

(d) They believe HEP requires more competence on the part of the teacher than non-HEP and that special training of teachers is essential to the program.

(e) They think that HEP students become especially more competent in (1) helping other children to learn; (2) reading a wide variety of books; (3) reading more and enjoying it, and (4) selecting their own activities. They don't think HEP students are more competent than non-HEP students in cursive writing.

The parents of all HEP pupils in the sample were sent questionnaires; 95% returned completed questionnaires. Generally, HEP parents (especially low socio-economic) think the program is an excellent one. In particular, parents like the reading components.

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FINAL REPORT:
AN EVALUATIVE STUDY OF THE
HAWAI'I ENGLISH PROGRAM

PERFORMED UNDER CONTRACT NO. 6691
WITH THE HAWAI'I STATE
DEPARTMENT OF EDUCATION

JUNE, 1977

1117 VIRGINIA, BERKELEY, CALIFORNIA 94702 (415) 524-0138 / 939 McCULLY, HONOLULU, HAWAII 96814 (808) 946-6339

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ACKNOWLEDGEMENTS

We are very grateful to the pupils, teachers, principals, and parents of the schools that cooperated in this study.

Though in no way responsible for any remaining defects in this report, several members of the D.O.E. staff gave us valuable review and criticism. They are:

Grace Fujita

Nancy Hiu

George Kagehiro

Emiko Kudo

Richard Port

Barbara Yamashita

Morris Lai, our contract monitor, provided not only thorough critique but also advice, encouragement, and assistance. Mahalo nui, Morris.

FINAL REPORT: AN EVALUATIVE STUDY OF THE HAWAI'I ENGLISH PROGRAM

I. INTRODUCTION

Purpose

It is the purpose of this report to provide the Hawai'i State Department of Education (D.O.E.), the Legislature of the State of Hawai'i, participants in the public education system of Hawai'i, and the general public with the findings of a study of the effectiveness of the Hawai'i English Program. This study is based on a carefully-selected, representative sample of fifth-grade classes on the island of O'ahu. Half the classes selected for intensive study are classified by the Department of Education as HEP (those using the Hawai'i English Program curriculum) and half as non-HEP. The study is intended to provide an assessment of the English language performance of pupils in both types of classes and the differences in performance associated with the HEP and non-HEP curricula.

Overview

This report begins with a brief history of the Hawai'i English Program and its development over the last ten years. We believe that some understanding of how and why this program came into being is essential to an informed interpretation of the results of this study.

This evaluation is the latest in a series of investigations that began even before curriculum development. A short review of these studies is given, not only because they have produced useful information, but also because such a review provides a context for the current research. Given this context, the plan for this evaluation is explained,

its premises and constraints are identified, and the rational for the study is given. We describe the methodology used, the development of tests and other instruments, sampling, the use of trained examiners, the data collection procedures, and the analysis plan. The results are reported without comment to give the reader an opportunity to examine them without any bias we might introduce. A discussion of these results follows in a separate section.

II. BACKGROUND

History of the Hawai'i English Program

Table 1 provides a brief description of development, installation, evaluation, and training activities in HEP from 1966 to 1976.

1966-1967

The Hawai'i English Project, initiated in May, 1966, was the major development project of the Hawai'i Curriculum Center (HCC). HCC was created as a joint activity of the State Department of Education and the University of Hawai'i, and was funded under Title III of the Elementary and Secondary Education Act.

HEP, planned as a five year development project, was established as a result of a widely recognized need to redefine the basic English programs for schools in Hawai'i in light of contemporary knowledge. In 1965, the D.O.E. sponsored a curriculum survey in which survey teams evaluated a random sample of 21 programs on their objectives, their relevance to the subject area, and their consistency with state educational aims (HEP Evaluation Report 1968-69, pp. 18-19). Findings, based on classroom visits, interviews, standardized test scores, etc., revealed several inadequacies in the language arts program.

Some of these inadequacies listed in the report (State of Hawai'i, Department of Education Survey Report, 1966) were:

1) lack of a clear definition as to what English is and a resulting growth of the curriculum by accretion;

2) focus on skills to the exclusion of language and literature content in the elementary years;

3) lack of research knowledge as a base for applications; and

4) obsolescence and serious repetitiveness of grammar instruction.

TABLE 1

HISTORY OF THE HAWAI'I ENGLISH PROGRAM

ACTIVITY	YEARS									
	1966-1967	1967-1968	1968-1969	1969-1970	1970-1971	1971-[illegible]	1972-1973	1973-1974	1974-1975	1975-1976
Development	Teams worked on design of K-12 program	Teams worked on design on K-12 program	Grades 7-12 development suspended. Teams concentrated on K-3 program.	K-3 program development completed.	4-6 program development completed. Thus development of elementary program was concluded.	---	---	---	---	---
Installation	---	---	---	---	Phase I (Grades K-3) 14%	Phase II (Grades 4-6) 49%	55%	57%	57%	53,216 K-6 students
Evaluation	---	Field testing of materials	Field testing continued expanded to 12 schools. First Annual Evaluation Report issued	Pilot testing of whole instructional packages. Annual Evaluation Report issued	Project-Eng. Evaluation Report issued	Annual Evaluation Report issued	Evaluation conducted, but report never published.	Annual Evaluation Report issued.	Evaluation Designed for 1975-1976	Funding withheld - evaluation postponed
Training	---	In-service training began. Pre-service training discussed.	In-service training	In-service training	In-service training $65,116.	In-service training $95,000.	In-service training $57,353.	In-service training $30,000.	In-service training $31,100.	In-service training $24,300.

These findings led to the decisions of the Board of Education and the D.O.E. to design an English curriculum specifically for Hawai'i. HCC was charged with developing a tested curriculum and planning its installation in the schools. In 1966, the target of Fall, 1971, was set for the completion of the kindergarten through twelfth-grade curriculum content development. Materials were to be ready for installation no later than Fall, 1973. Curriculum development teams were established -- one for the Skills section of the program and one for a Language and Literature section. The teams were comprised of university specialists and elementary classroom teachers. Ideas of curricular practice advanced by King and Brownell (1966), Bruner (1960, 1962, 1966), Schwab (1962, 1966) and Phenix (1964a, 1964b) influenced the development of the program. Research in language and linguistics, cognition, and learning theory by Chomsky (1957, 1965), Piaget (1959), Lenneburg (1964), Ausubel (1963), Skinner (1968), and Purves (1968) were also influential.

During the 1966-67 school year, to establish a trial school network for formative evaluation of the elementary program, administrators and school staff were introduced to the new program, participating teachers were trained, and the Laboratory School kindergarten population was changed to include low-income children.

The HEP planning teams used a "systems" approach emphasizing the interrelationships among the elements -- e.g., goals, outcomes, materials, teachers, pupils, and the environment.

The curriculum development teams were responsible for:

1) defining "English";

2) planning a curriculum in which new knowledge builds on what has gone before;

3) designing a set of learning materials;

4) planning guides for teachers using the materials;

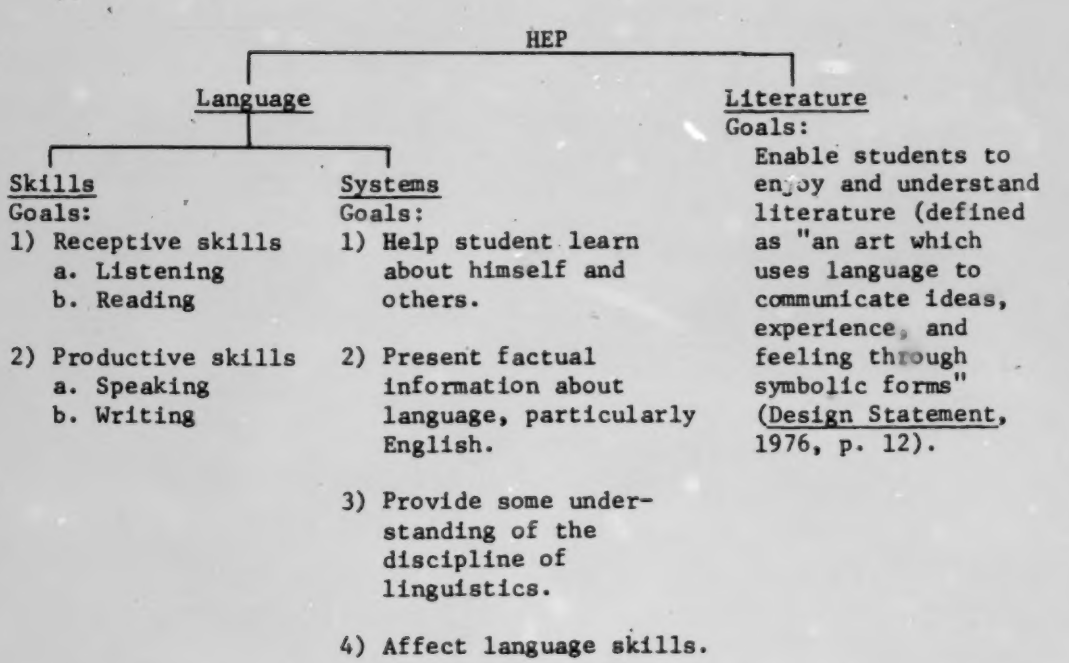
5) developing evaluation for assessing students' progress and monitoring their school experiences;

6) preparing a teacher training program and suggesting the materials for the program; and

7) planning the installation of the program in the schools.

Content, Objectives, and Procedures of the Program

HEP developers defined English as a program of studies consisting of two major areas, Language and Literature. The following is a diagrammatic representation of the curriculum organization:



Descriptions of curriculum content for Skills, Systems, and Literature appear in Tables 2, 3, and 4 respectively.

TABLE 2

LANGUAGE SKILLS

Non-graded, multi-media, self-instructional or peer-taught units of materials to help the student toward progressively greater synthesized control of his language performance.

SKILLS WITH ORAL SYMBOLS

Listening/Speaking

Phonology
- Sounds of English
- Intonation
- Stress

Vocabulary
- Colors and Shapes
- Prepositions
- Affixes
- Multiple Meanings
- *Vocabulary

Grammar
- Plurals
- *Irregular Plurals
- ***Determiners
- *Comparisons
- Grammar **1 and 2
  - Verbs
  - Pronouns
  - Questions
  - Negatives
  - Possessives
  - Phrases
  - Word Differences
- Grammatical Flexibility

Language Variations
- Style Variations
- **Dialect Variations

**Task-Oriented Communication

**Task-Oriented Group Discussion

**Meaningful Communication

*Communication Tasks
- Giving Information
- Getting Information
- Exchanging Information
- Using Information

Songs

SKILLS WITH GRAPHIC SYMBOLS

Reading

Graphic Symbols Discrimination
- *Shapes and Letters
- Letters
- Words

Graphic Symbols Recognition
- Letters
- Numbers
- ***Words
- Phrases and Sentences
- Audio Card Books
- BRS Satellite Kit

*Sound Symbol Matching

Purposeful Reading
- *Little Books
- Instructional Library
- **Dialect Books
- Speeded Reading
- SRA IIA Kit
- Audience Reading
- *Understanding Written Instructions
- **Coordinated Language Skills
- Reference Skills

Taped Books

Writing

Handwriting
- Letter Discrimination
- Letter Recognition
- Cursive Writing
- Manuscript Writing

**Purposeful Writing

Written Communication
- **Meaningful Communication
- *Communication Tasks
  - Giving Information
  - Getting Information
- *Writing: Listening/Speaking Components
- *Writing in a Selected Style
- *Journal

Spelling

Capitalization

Punctuation

Typewriting
- Typing Skills
- Applied Typing

The original Language Skills curriculum was revised:

*indicates added components (9/77)
**indicates deleted or consolidated components
***indicates modifications

TABLE 3

LANGUAGE SYSTEMS PROGRAM

Elementary Division (4-6)
PERSPECTIVES IN COMMUNICATION

Grade 4	Sounds
	Dialects
	Symbols
	Names
Grade 5	Advertising
	Sign Languages
	Gestures
	Social Uses of Language
Grade 6	International Languages
	Animal Communication
	Writing Systems
	Secret Codes

The planning teams tried to plan a language arts curriculum with the following characteristics:

1) individualized instruction;

2) evaluation of instructional objectives built into educational materials;

3) peer tutoring;

4) emphasis on inductive and discovery approaches to learning;

5) a move toward "activity-centered" learning; and

6) multi-modal presentation.

Thus, by the spring of 1967, development of a language arts curriculum for grades K-12 was underway, and HEP staff members spent the year planning courses and designing materials to meet the needs and goals which had been identified.

Table 4

Hawai'i English Program

Literature K-6

		MAKE BELIEVE	THE WORLD AROUND US	GROWING UP	SOCIAL ORDER	ADVENTURE
BAND I (K-2)	Literature Listening	Fabulous Creatures Magic & Wonder	Rhythms of Art Rhythms of Nature Rhythms of Man	Self & Family Imagining Things	Heroes & Leaders Animal People	Narrow Escapes
BAND II (3-4)		Magic & Wonder Fabulous Creatures Wishful Thinking Little People	Rhythms of Art Rhythms of Nature Rhythms of Man	Self & Family Imagining Things Insights	Heroes & Leaders Animal People	Narrow Escapes
BAND III (5-6)		Magic & Wonder Bigger Than Life Little People	Rhythms of Art Rhythms of Nature Rhythms of Man	Self & Others Imaging Things Insights	Heroic Deeds Acquiring Wisdom	Searches Encounters
		MAKE BELIEVE	THE WORLD AROUND US	GROWING UP	SOCIAL ORDER	ADVENTURE

1967-1968

Development

During the 1967 summer session at the Laboratory School, Skills course ideas were tested at the elementary, intermediate, and high school levels. Field testing of Skills materials continued in the 1967-68 school year, along with program design revisions and development of materials. In addition, the development and field testing of Literature and Language Systems materials were begun. Field schools began with kindergarten student participation in September, 1967, and added one grade level each year.

Training

Training in the form of summer courses carrying university credit was offered to teachers in preparation for a planned large-scale field test of student-curriculum interaction. HEP staff and university members discussed additions to in-service teacher preparation programs. Also, eight district coordinators were trained in the installation of HEP.

Staff

The Language and Literature team was divided to make a Language Systems team and a Literature team. Thus, with the original Skills team, there were three curriculum planning groups.

During the 1967-68 school year, program development and revision continued to be major activities. In addition, field testing of courses and materials prototypes and teacher training were begun.

1968-1969

Development

During the 1968-69 school year, the focus of the development teams changed as a result of a legislative request that some part of the HEP program be installed by the fall of 1970. According to the American Institutes for Research report on HEP (1971),

> the Hawai'i legislature was not convinced of the worthiness of the Hawai'i English Project. They pointed out that unless they could use a segment of the program, e.g., K-3, by the Fall of 1970, they could see nothing that would assure the survival of the project. Also by December, 1970, they wanted good indications that the remainder of the K-6 program would be delivered in the Fall of 1971 (p. 61).

The Board of Education then directed implementation of the K-3 package by September, 1970, and completion of the program through sixth-grade by September, 1971. Implementation became a primary goal, reducing the research and experimental aspects of the project. Because of the acceleration of the installation of the elementary program and the reduction in federal funding, the development of materials for grades 7-12 was suspended until the project's capability to deliver the K-6 portion could be demonstrated.

Training

During this year, more teachers were trained for the pilot testing projected for 1969-71. Seminars in Language and Literature as well as Title III workshops on Primary Language Trial Materials were conducted by HEP staff members on O'ahu and Moloka'i.

Organization

In 1969, the HCC, the joint activity under which the D.O.E. and the University had begun HEP, was dissolved, and management of HEP became the sole responsibility of the D.O.E. (HEP Elementary Program Design

Statement, 1976). Dr. Shinkichi Shimabukuro, Director of the Curriculum Development and Technology Branch, Office of Instructional Services, D.O.E., became Chief Administrator of HEP.

1969-1970

Development

Development and revisions of materials for the Skills, Language Systems, and Literature sub-programs were continued. The kindergarten through third-grade curriculum development was completed and specifications for production of materials were written. Plans and development for the secondary English Program were shelved.

By the 1969-70 school year, 12 schools were participating in the trial stages of HEP. New instructional components and procedures were first tried out and evaluated in the field schools beginning in September, 1967. Pilot schools began with kindergarten and first-grade children in September, 1968. Whole instructional packages containing revised components were tested in pilot schools prior to final revision before they were introduced into regular installation classrooms throughout the state.

Staff

The project employed a staff of approximately 50 persons, including university specialists and master teachers of English, writers, evaluation specialists, media technicians, production specialists, and clerical staff.

Training

The three major training activities of the staff in 1969-70 were: (1) training teachers and supervisory personnel through formal summer institutes, on-site demonstrations, and classroom consultations; (2) developing teacher-training materials; and (3) planning with the University of Hawai'i's College of Education for pre-service and in-service teacher education. In addition, installation teachers and a new group of district coordinators were trained.

By 1969-70, 12 schools were participating in field or pilot testing of HEP. Curriculum components were tried, evaluated, and revised for the next year's installation.

1970-1971

Development

During the 1970-71 school year, emphasis was placed on completion of the development, testing, and revision of the fourth- through sixth-grade components of HEP. In addition, the design statement for the program was completed. These activities concluded the development of the elementary HEP curriculum.

Installation

In 1970-71, the final versions of the Language Skills and the kindergarten and first-grade Literature sub-programs were introduced to kindergarten and first-grade children in at least one classroom in every school in the state (Phase I installation). Thus, 14% of the elementary school children in Hawai'i (or approximately 14,850 pupils) received some degree of instruction in HEP. Information about state-wide and HEP enrollment from 1970-76 appears in Table 5.

TABLE 5

STATE AND HEP ENROLLMENT
GRADES K-6

1970 - 1976

	State-Wide Enrollment	HEP Enrollment	Percentage
1970-71	102,637	14,850	14
1971-72	105,436	51,519	49
1972-73	98,611	54,107	55
1973-74	93,855	53,064	57
1974-75	91,520	52,167	57
*1975-76	90,716	51,708	57

* Projected enrollment

From, Progress Report on the Installation of the Hawai'i English Program, Curriculum Development and Technology Branch, D.O.E., 1974.

In addition to installing the program in classrooms, a system was developed for retrieval/replacement of defective, missing, and damaged materials. Also during this year, production specifications for materials for next year's installation in grades 4-6 (Phase II) were completed. Plans and a budget for Phase II installation were developed and approved. Tables 6 and 7 show costs of installing and maintaining HEP.

Staff

The project employed more than 65 professional staff members during 1970-71. In addition to specialists in education, evaluation, media technology, production, and business administration, the staff included 15 student artists and a classified clerical staff.

TABLE 6

HAWAI'I ENGLISH PROGRAM 1970-1977

Installation Materials and Equipment		$ 7,294,686.00
Replacement Materials and Equipment	$ 3,397,541.00	
District Coordinators	490,000.00	
Installation Teachers and Coordinator	2,876,474.00	
Production Office	205,752.00	
Monitoring Office	422,711.00	
In-Service Training	317,169.00	
		7,709,647.00
		$15,004,333.00

From, Progress Report on the Installation of the Hawai'i English Program, Curriculum Development and Technology Branch, D.O.E., 1974.

Note: Costs for 1975-77 are projected.

Total Materials Cost Per Pupil
Per Year 1970-77 = $ 32.64

Training

Training and support of installation teachers and district coordinators were continued, and in-service training for Phase II installation was conducted. Table 7 shows that during the 1970-71 school year, $65,116.00 was spent on in-service training, and a total of $401,482.00 was spent for district coordinators and installation teachers.

HEP was formally installed in 1970-71, and approximately 14% of the state's school children received some instruction in the program. Having completed the K-3 curriculum, the development teams concentrated on designing, testing, and revising the grades 4-6 components and materials for HEP.

TABLE 7

BREAKDOWN OF HEP COSTS BY YEAR
1970 - 1977

	Installation Material & Equipment	Replacement Material & Equipment	District Coordinators	Installation Teachers & Coordinator	Production Office	Monitoring Office	In-service Training
1970-71	847,593	—	70,000	331,482	34,992	60,000	65,116
1971-72	1,687,098	41,715	70,000	389,573	34,992	60,000	95,000
1972-73	538,041	171,553	70,000	274,493	27,992	72,000	57,353
1973-74	2,613,481	387,729	70,000	56,049	27,992	30,000	30,000
1974-75	762,951	689,391	70,000	486,863	27,992	36,000	31,100
1975-76*	845,522	1,009,080	70,000	669,148	27,992	71,003	24,300
1976-77*	—	1,098,073	70,000	668,866	23,800	93,708	14,300
TOTAL -	$7,294,686	$3,397,541	$490,000	$2,876,474	$205,752	$422,711	$317,169

* Projected Costs

From, Progress Report on the Installation of the Hawai'i English Program
Curriculum Development and Technology Branch, D.O.E., 1974.

1971-1972

Organization

With the termination of the five-year project in August, 1971, responsibility for the installation of the new program was transferred from the Curriculum Development and Technology Branch of the D.O.E. to the General Education Branch of the D.O.E.

Installation

During 1971-72, installation of HEP was expanded from 14% to include 51,519 (or 49%) of children in grades K-6, as shown in Table 5. According to the Progress Report on the Installation of HEP (1974), six of the 15 Language Systems units were available and only the first third of the Literature program was installed during 1971-72. To provide HEP for larger numbers of children and to reduce the cost of installation of the program, the legislature provided funds for additional materials so that existing Skills classes could share their materials with additional classes.

Training

By 1971-72, 84% of K-3 HEP teachers had received at least one-week of in-service training. The Progress Report on the Installation of HEP (1974) states that although the original plans called for a two-week summer workshop for all HEP teachers, it was difficult to reach teachers in the summer, and some positions were vacant until the end of August because teachers were being hired from the mainland at the last minute. Further, it would have been impossible to require training without paying teachers to attend HEP workshops, the report pointed out.

With the implementation of the grades 4-6 components, installation

of HEP expanded from 14% to 49% of the children in grades K-6. At that point, then, development of the elementary program was considered completed.

1972-1973

Installation

By 1972-73, the State was moving into a fiscal recession, and the D.O.E. was faced with the conflict between the educational advantages of providing continuity for those already participating in HEP and the lack of resources. The legislature appropriated funds so that HEP students could continue in the program in grade three, but no funds were provided for the purchase of new program packages. This action necessitated additional sharing of Language Skills and Literature packages. Funds were also provided for the installation of three additional Language Systems units, one for each grade from four through six. For estimated enrollment, see Table 5.

Training

According to the Progress Report on the Installation of HEP (1974) in the summer of 1972, HEP in-service training plans were caught in the D.O.E./Hawai'i State Teacher's Association (HSTA) negotiations. HSTA took the position that teachers should be paid for required in-service training work. Such payment was not in the HEP budget, and the D.O.E. advised HEP to discontinue its summer workshops. Thus the percentage of K-3 teachers with one week of training dropped from 84% to 67%. The amount spent on in-service training dropped from $95,000.00 in 1971-72 to $57,353.00 as shown in Table 7. In 1973, as part of the State's austerity program, Governor Burns called for a moratorium on state spending.

Because the State was moving into a fiscal recession in 1972-73, enrollment in HEP rose only 6% -- to 55%, and funds spent on in-service training dropped considerably.

1973-1974

Installation

The Progress Report on the Installation of HEP (1974) reported that although the legislature appropriated funds to provide for the continuation of students in HEP through grade four, because a tax bill failed to pass prior to the end of the session, no funds were made available. In late Fall, however, the Governor granted the D.O.E. permission to use Department savings to install HEP in fourth-grade classes containing disadvantaged learners. According to the installation report, approximately 90 of the 175 elementary schools received these Language Skills and Literature materials. Other children who had been in HEP in the third grade reverted to the conventional fourth-grade language arts program.

1974-1975

Installation

For the 1974-75 school year, funds were released for the purchase of materials for those students who had been receiving HEP in previous years. Thus, the D.O.E. purchased fifth- and sixth-grade HEP materials and fourth-grade materials for those schools that did not participate in the earlier limited grade four installation in 1973-74 (Progress Report on the Installation of HEP, 1974).

It was estimated that 57% of the state's elementary school children received some part of the program. In grades K-3, the Language Skills and Literature sub-programs were used. All three sub-programs were

available for grades four, five, and six.

Training

Funding was increased for the 1974-75 in-service training of teachers, though school had already closed in June before the D.O.E. was notified of the release of funds. The neighbor islands were able to locate enough teachers to conduct in-service training activities in August. O'ahu districts conducted some in-service workshops starting in September, but some of these were only two-day activities (Progress Report on the Installation of HEP, 1974, p. 9). As Table 7 shows, $31,100.00 was expended on in-service training in 1974-75.

In 1974-75, funding was increased for both installation and in-service training, and both were expanded from the previous year's level.

Previous Evaluations of HEP

Information about HEP evaluations was taken from the annual evaluation reports issued by the HCC and the D.O.E. All conclusions and data are those reported originally. Some of these reports were either performed or audited by external agencies. Nomos did not audit these reports nor analyze any data from past evaluations and does not assume any responsibility for their accuracy.

1968-1969

In 1969, the first annual evaluation report was issued. It contained data collected during the 1968-69 school year and analyzed by the HEP evaluation staff of the HCC. Emphasis was placed on evaluating the Language Skills sub-program. The primary purpose of the evaluation was to provide information useful in revising the curriculum programs and assessing progress to date.

Data from approximately 93% of the grades K-2 children in HEP were used to compare planners' expectations with children's actual achievement on 24 items in the Skills sub-program. In general, student performance, as measured by the number of components completed, was consistent with expectations. On five of the items, actual performance exceeded projections by more than 10%, and on one item, performance was more than 10% below the projection.

Sample sizes for the annual performance tests varied considerably. In Reading, for example, 32 Kalihi-Uka children -- a kindergarten boy and girl and a first-grade boy and girl from each of the eight field classes -- took a test in which they had to read a stack of 50 cards. For the Listening/Speaking test, 40 students were reportedly randomly selected in kindergarten, first, third, and fifth grades of Kalihi-Uka

(making a total of 160 students). A control group of 40 kindergarteners and 40 first graders was randomly selected from Ka'iulani School. Evaluators compared the sound-discriminating ability of younger and older children and of dialect speakers and standard speakers. Sample sizes were not reported for some of the annual performance tests.

According to the HCC 1968-69 Annual Evaluation Report, the evaluation staff concluded that:

1) "children advanced noticeably in Language Skills, responsibility for their own learning, and interest in school" (p. 1);

2) children in the Skills program made "substantial academic progress" (p. 1) during the year, in terms of reading vocabulary, number of books read, and ability to copy sentences accurately from a model in cursive writing; and

3) peer teaching at the kindergarten and first grade level was an "effective method of learning" (p. 2) for both the learner and the tutor.

1969-1970

Language Skills

The Annual Evaluation Report of 1969-70 focused primarily on the staff's evaluation, i.e., assessment of the intended and unintended outcomes of the project. A variety of methodologies was used, including criterion-referenced measures of HEP students' performance, comparisons of HEP and non-HEP students using both standardized tests and criterion-referenced measures, and correlational studies (e.g., socio-economic status and performance in HEP).

For example, according to the evaluation report, curriculum planners' expectations of student achievement in reading, writing, listening/speaking, and typing were compared to actual performance of 1,900 HEP students on 23 components of the Skills program. Measures included

number of words and books read and ability to copy numbers, words, sentences, and paragraphs accurately, etc. It was reported that of the 23 components tested, there were nine where actual performance exceeded planners' projections by more than 10% and five where performance was more than 10% below the projection. The evaluation staff concluded that in general, student performance on criterion-based measures met or exceeded the planners' expectations.

The report also states,

> When California Reading Test scores for (69) HEP and (67) non-HEP second-graders were correlated with mental age and socio-economic status measures, it was found that children in HEP classes who had below average mental-age scores on the California Test of Mental Maturity or were in the lower half of the socio-economic spectrum outperformed their equivalents in the non-HEP comparison group. There was no significant difference between the scores of HEP and non-HEP children in the upper halves of the two groups (HEP Annual Evaluation Report, 1969-70, p. 5).

In addition, information was collected on students' use of time and their attitudes; the perceptions of teachers, visitors, and other persons; teacher activities; the cost of materials and equipment; and the operation of the project in relation to its stated goals and objectives.

Literature

HEP and non-HEP students in grades two through four were compared on a pre-test, a mid-year test, and a post-test designed to measure the students' ability to understand and appreciate literature. Pre-tests were given to 660 HEP students and 42 non-HEP students. The mid-year test was administered to a random sample of 55 HEP students and 29 non-HEP fourth graders. For the post-test, 52 HEP students and 24 non-HEP fourth graders were randomly selected (Annual Evaluation Report, 1969-70, p. 106).

Pre-test and mid-year test data showed that the experimental group (HEP) of fourth graders did "slightly better" than the comparison group. Although experimental group mean scores were reported for second-, third-, and fourth-grade children, only comparison-group mean scores were reported for fourth graders. Therefore, it is impossible to make some comparisons.

Language Systems

On the basis of a low correlation (.26) between socio-economic status and total score on an HEP-developed Language Systems test administered to 131 HEP fourth graders, the evaluation staff tentatively concluded that low SES children had "about as much chance of succeeding in the Language Systems sub-program as children of higher socio-economic status" (Annual Report, 1969-70, p. 6).

1970-1971

Skills

A number of techniques were used in the 1970-71 evaluation, including pre- and post-administrations of standardized and HEP-developed tests; classroom observations; teacher ratios; student attitude surveys; student and parent interviews; teacher, principal, and installation teacher questionnaires; demographic data forms; and attendance records.

Staff evaluators reported no overall significant differences between 518 HEP and 321 non-HEP K-3 students on reading achievement based on the number and difficulty of books they had read. However, there were significant differences reported in reading achievement measured by vocabulary and reading comprehension, favoring HEP, between medium and low-ability HEP and non-HEP third graders and between HEP and non-HEP

second graders. The Gates-MacGinitie Reading Tests, administered to 56 HEP and 76 non-HEP second and third graders, also failed to reveal significant differences between the experimental (HEP) and control groups.

The evaluation staff concluded that participation in HEP permitted pupils to assume a greater responsibility for their own learning. This conclusion was supported by data from classroom observations, which showed that "over 85% of 103 grades K-3 pupils observed demonstrated some degree of independent, self-directed behavior based on nine behavioral characteristics" (Final Evaluation Report, p. 9).

Literature

Classroom teacher questionnaires, classroom observations, and parent interviews were used to evaluate the progress of the HEP Literature sub-program for grades K-2 during the 1970-71 school year (Final Report 1970-71). The samples were the same as for the evaluation of the Skills sub-program.

Data reported from 83 teacher questionnaires indicated that approximately 93% of the sample believed that the program goal of encouraging students to become actively involved with literature through activities was being met. The evaluation staff also reported that the data indicated that 50-60% of the teachers felt that the program helped children become more fluent in ideas, speaking, and perception.

According to the Final Evaluation Report, teachers generally believed that the HEP Literature sub-program seemed to meet the needs of the high- and average-ability pupils, but they were not as convinced that the program met the needs of the low-ability and non-English speaking children.

Language Systems

Data for the 1970-71 evaluation of the progress of this sub-program were obtained through (1) a teacher questionnaire (completed by 28 classroom teachers) on the effects of the total program; (2) individual unit evaluation questionnaires completed by teachers upon using the different units; (3) pre- and post-tests completed by 492 HEP and 123 non-HEP fourth graders; and (4) an HEP-developed linguistics test administered to the same sample of HEP and non-HEP fourth graders. Some of the standardized tests used were the School and College Ability Test (SCAT) and the Sequential Test of Educational Progress (STEP) Reading Test.

The evaluation staff reported no significant differences in achievement gain between HEP and non-HEP students, as measured by an HEP-developed achievement test, in knowledge about languages and understanding of linguistics. However, HEP students had higher raw score means (27.51 for the HEP group and 25.81 for the control group). HEP students scored significantly lower on SCAT than the control group. According to the evaluation staff, this result indicated that HEP students had lower aptitude for school achievement than their non-HEP counterparts (Final Evaluation Report, p. 285).

1971-1972

Findings from the 1971-72 evaluation activities were considered interim data providing information about the success of HEP components as they were being installed. HEP staff evaluators felt that the total impact of HEP could not be fully established until all three sub-programs were completely installed and used by those students who would have had

them since kindergarten.

Language Skills

Evaluators compared the rate of progress in the Skills sub-program of 22,111 HEP grades K-4 students with the rate expected by project staff. They found that pupils were completing the Skills components at or exceeding the expected rate.

On a staff-developed Punctuation test administered to 226 HEP and 287 non-HEP fourth graders, the HEP students scored significantly higher ($p < .01$) than the control group.

It was reported that "the data gathered for this past school year (1971-72) revealed that the most prominent differences between HEP and non-HEP students, favoring the HEP group, were made by fourth-grade pupils, who were the highest level of sample subjects using the HEP" (Annual Evaluation Report, 1971-72, p. 9). From this finding the staff evaluators concluded that the effects of HEP were cumulative -- i.e., "the longer a student is exposed to the HEP, the more beneficial the program is to the student" (p. 9).

Language Systems

A group of 140 HEP fifth and sixth graders outperformed their 151 non-HEP counterparts on a staff-developed test of linguistic concepts. However, evaluators noted that the score differences, though statistically significant ($p < .05$ for the total score), were generally small (46.12 and 43.63 with 48 as perfect score), and the validity of the test used had not been fully ascertained. The evaluators pointed out, "nonetheless, the data from this assessment does provide some evidence that positive effects were taking place as a result of the program" (p. 10).

The Hawai'i Communication Test, developed by the D.O.E. to measure

speech communication proficiency, was administered to a sample of 163 HEP and 240 non-HEP fourth graders. Sub-test four was designed to measure students' "Affect Accuracy" -- i.e., their ability to communicate various emotions and states. Scores from this sub-test were almost identical for the two groups (19.16 for HEP and 19.37 for control students).

Literature

No evaluation of the Literature sub-program was reported in the Annual Evaluation Report, 1971-72.

1972-1973

The purpose of the 1972-73 evaluation was to provide the basis for continuing field evaluation of HEP though the report was never published. Measures on the follcwing variables were collected through the use of observation of K-3 students and self-report instruments: student IQ; teacher's experience (in years); teacher's experience with HEP (in years); in-service training (number of teachers trained); teacher attitude toward HEP (questionnaire); time spent in language arts (minutes per day); adherence to the HEP system; and classroom organization (3-on-2 or self-contained).

The measure of pupil performance was the percentage of students completing certain target components that had been selected to represent the four subject areas of the Skills sub-program -- Reading, Writing, Listening/Speaking, and Typewriting.

The staff evaluators compared the proportion of students completing the target components under two or more of the above variables. For example, the performance of high-IQ students was compared with the performance of low-IQ students.

The evaluation staff came to several tentative conclusions based on these comparisons. Some of them were:

1) The average IQ of the class was strongly related to pupil performance on the components. The 30 K-3 students in classes with an average IQ of 103 or higher performed consistently better than 28 K-3 students in classes with an average IQ of 98 or less.

2) Based on data from 490 K-3 classes, no significant differences in student achievement in Reading and Writing were found in comparing teachers with and without previous experience with HEP. However, the evaluators pointed out that the relationship may have been masked by an IQ factor because the more experienced HEP teachers were working with students with lower mean IQ scores.

3) On the basis of data from 768 K-3 classes, the evaluators reported that the performance of students in classes that spent more than 110 minutes per day in HEP were superior to the performance of classes which spent less than 110 minutes a day on HEP. Classes that spent 80 minutes or less per day performed consistently below all the other groups. The report also pointed out that HEP staff recommended that two hours be used daily for HEP.

1973-1974

The 1973-74 HEP Evaluation Report dealt with differences in performance between 293 second and third graders in the Language Skills components of HEP and 282 similar children in other language arts programs. Performance was compared in two cognitive areas -- Reading and Writing. Reading was assessed by the Vocabulary and Comprehension sub-tests of the Gates-MacGinitie Reading Achievement Test and sub-tests of the objective-based Individualized Language Skills Test. Spelling, Punctuation-Capitalization, and General Writing were also measured by sub-tests of the Individualized Language Skills Test.

Schools were selected so that, at each level of analysis, the HEP and non-HEP samples were equated in terms of mean school intelligence test score, based on 1972 state-wide testing of second graders.

According to the report, comparisons between HEP and non-HEP students favored the HEP groups in every case on every test of Reading and Writing, regardless of grade or classroom organization (i.e., 3-on-2 vs. self-contained). Differences between groups on 15 out of 16 tests were reported to be statistically significant. This study was conducted by an entity of the University of Hawai'i.

1973-1974 (Project ALOHA)

According to its 1973-74 evaluation report, (Project Annual Evaluation Report, 1973-74 Grant Year for Project ALOHA) Project ALOHA was developed as an installation of HEP with adaptations to mainland language groups. It was operated on an ESEA Title III demonstration grant from the U.S. Office of Education to a consortium of the Archdiocese of San Francisco, Berryessa Union School District, Cupertino Union School District, Oak Grove School District, San Jose Unified School District, and Santa Clara Unified School District.

Teachers' class records of student progress were the major source of data. Teachers recorded, on a daily basis, each activity that each student began, continued, completed, or was not required to complete. Student enrollment in Project ALOHA in 1973-74 was 1,242 in grades K-3. There were 39 teachers and nine teacher aides in the seven Project ALOHA schools in 1973-74.

It was reported that students who received a fully-implemented HEP program were on target - i.e., they met the HEP goal that 95% of the students should have read at least 20 books rated as being of sixth-grade readability or higher by the end of the sixth grade.

Parts of the Spache Diagnostic Reading Scales (DRS) were administered to 115 third graders who had been in HEP for three years. Student performance was between two and six months above the expected mean grade level score for third-grade students.

Based on attitude questionnaire responses of 106 third-grade students, the evaluators concluded that students in general expressed positive attitudes toward HEP. Questionnaires were distributed to the 39 teachers and nine aides involved in the project. All of the 17 teachers who returned the questionnaire indicated that, if given a choice between teaching HEP and some other curriculum, they would choose HEP. None of the aides returned the questionnaires.

1974-1975 (Project ALOHA)

In general, the 1973-74 evaluation plan was used again in 1974-75 (Project ALOHA 1974-75 Evaluation Report). Based on teachers' records of student performance, the evaluators concluded that "Project ALOHA students have generally made satisfactory progress toward the overall reading program exit criteria - i.e., if student performance continues at the same rate, 95% of the students in Project ALOHA schools will complete the HEP reading exit criterion .... by the end of grade 6 ...." (p. IV - 7).

Evaluators reported that student performance on the Spache Diagnostic Reading Scales was between four and eight months above the expected level for 222 third and fourth graders who had had HEP for four years.

As in 1973-74, it was reported that responses to the attitude questionnaires indicated that students and teachers had positive attitudes toward HEP.

1975-1976

Although no annual evaluation report was issued in the 1975-76 school year, some small-scale studies were conducted on Hawai'i District HEP in-service training and report card data from intermediate school students who had been through an HEP elementary program.

Table 8 summarizes the findings about HEP in-service training of 305 teachers in the Hawai'i District.

In a related study, data on the amount of HEP in-service teacher training were correlated with class performance in Skills for grades K-5 on the island of Hawai'i. In general, the correlations are low, although Skills training appears to have the strongest relationship (i.e., stronger than Literature and Systems training) with class performance in Skills in most of the grades.

In another study, report card data were used to compare seventh-grade students at Dole Intermediate School who had been through an HEP elementary program with students from other elementary schools that feed into Dole. On a test of program effects, it was found that the former HEP students tended to get slightly lower grades than the comparison group in the seventh grade. Scores on the California Test of Mental Maturity, administered when these students were second graders, were used as a check of the comparability of the groups. On this test, the former HEP students (as second graders) tended to score slightly lower than the comparison group. The comparability of the two groups is therefore questionable.

In May, 1975, a correlational study was conducted relating amount of HEP in-service training for 353 teachers to Skills progress of HEP students in grades K-5 on the island of Hawai'i.

TABLE 8

HAWAI'I DISTRICT HEP IN-SERVICE TRAINING

	Grades K-3 (N = 200 teachers)	Grades 4-6 (N = 105 teachers)
Language Skills		
Mean number of hours of HEP in-service training	38.4	22.7
Median number of hours of HEP in-service training	40.4	16.4
% of teachers with no in-service workshop training	7%	13.3%
Literature		
Mean number of hours of HEP in-service training	18.4	9.7
Median number of hours of HEP in-service training	23.6	8.0
% of teachers with no HEP literature in-service training	10%	26.7%
Language Systems		
Mean number of hours of HEP in-service training	---	20.9
Median number of hours of HEP in-service training	---	16.3
% of teachers with no in-service training in language systems	86%	17%

The evaluators reported that in kindergarten and first grade, the correlations were relatively low (ranging from -.19 to .33) but concluded that teacher training in Language Skills was positively correlated with class performance. In grade two, the correlations were small except for (1) Skills training and Task Oriented Communication (r = .31) and (2) Skills training and Prepositions (r = .28). All correlations reported for the third grade were low. In the fourth grade, there were evidence of a positive though weak relationship between Skills training and Reading performance (r ranges from .06 to .22) and a negative relationship between Skills training and high level of Purposeful Writing (r = -.40). In grade five, Skills training was negatively related to Listening/Speaking performance and both positively and negatively related to Reading performance.

The evaluators offered no interpretations of their findings.

Recognition and Awards

The developmental staff and the program have received recognition and several awards. Among these are:

1. Innovative Project Award, President's National Advisory Council on Supplementary Centers and Services, June 1, 1970.

2. Educational Pacesetter Award, President's National Advisory Council on Supplementary Centers and Services, April 4, 1972.

3. Special Award, by the Pacific Speech Association to Ms. Nancy Hiu, planner for the Listening/Speaking Strand in HEP, 1972.

4. Senate Resolution Number 271: Congratulating the Hawai'i English Program, Senate, Sixth State Legislature, April 7, 1972.

5. Certificate of Merit presented to HEP and the D.O.E. by Robert Wheeler, the Associate Commissioner of Education, 1973.

6. Named one of the 12 outstanding Validated Reading Programs in the United States by the Right to Read Effort in the U.S. Office of Education, April, 1975.

In addition, HEP has been accepted and installed in several school systems on a pilot basis. These include:

1. Franklin Pierce School District, Tacoma, Washington.

2. Project ALOHA, Berryessa Union School District, San Jose, California.

3. Project Pacific, D.O.E., American Samoa.

4. Project Pacific, D.O.E., Agana, Guam.

5. Project Pacific, Trust Territory of the Pacific Islands, Saipan, Mariana Islands.

6. National City School District, National City, California.

7. Farson County Line Independent School District, Farson, Texas.

The 1976-1977 Evaluation Plan

The design of this evaluation study was guided by the document Evaluation Design, Hawai'i English Program written by Dr. Morris Lai in November of 1975 and his earlier testimony to the Hawai'i Senate Education Committee in February of that year. However, because of constraints imposed by time and budget, some alterations in that design were necessary.

In general, the current plan calls for comparative information to be collected from a carefully-selected sample of HEP and non-HEP fifth-grade classrooms on O'ahu. Some of this information was collected between October and February of this school year, and another set of data was collected between March and May of 1977. Some of this information is about the knowledge and language skills of pupils, some reflects the attitudes of pupils and teachers. Other data about HEP instructional practices were collected by direct observation of classrooms. The types of information obtained in the two data-collection periods are shown in Table 9. The sampling plan, tests, observation guides, and questionnaires employed were, for the most part, developed during the summer of 1976. The Language Systems Test and interview guides were developed during the 1976-77 school year. The schedule for these activities as well as for the analysis and reporting is shown in Table 9.

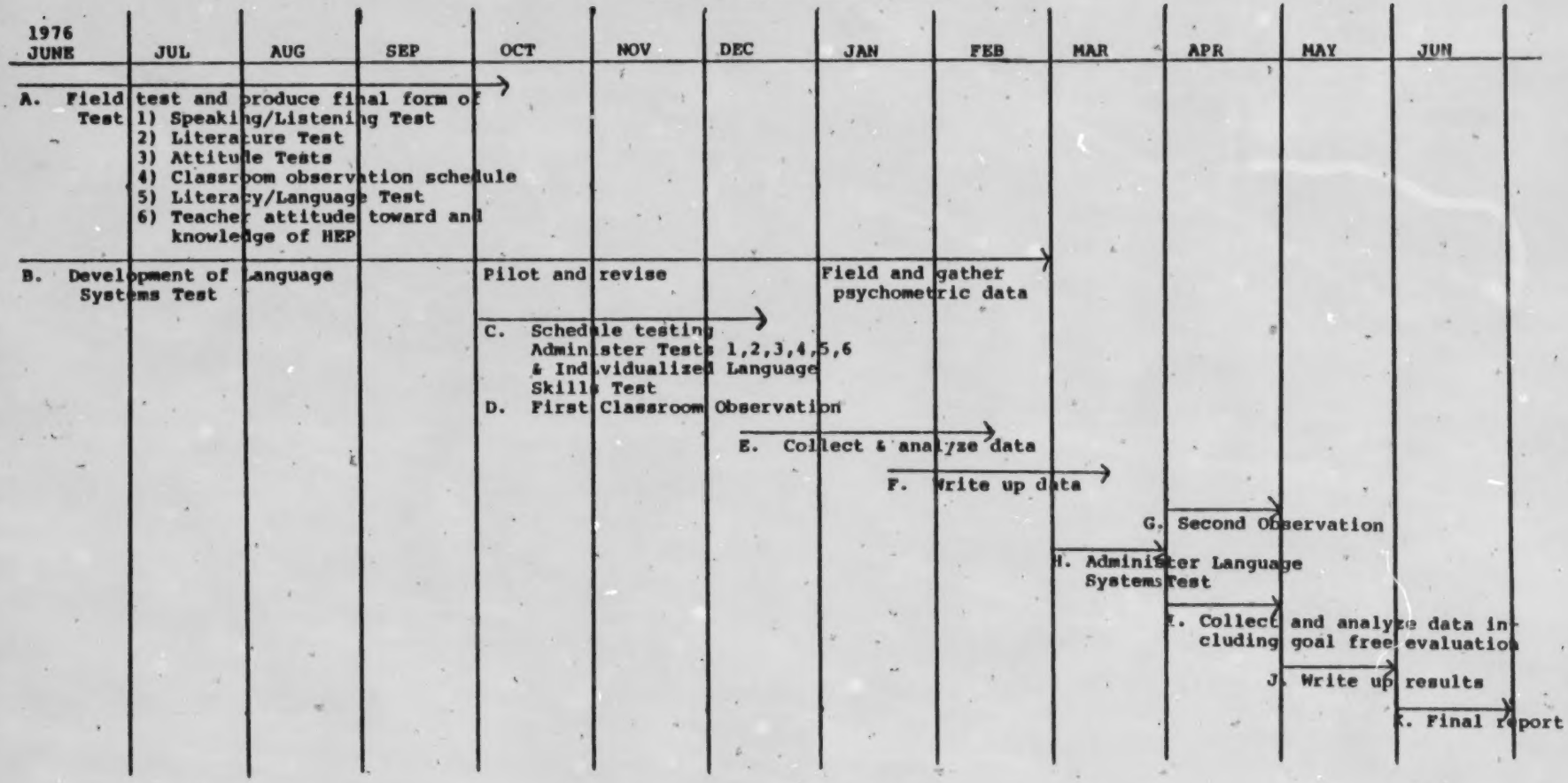
Rather than relying upon teacher-administered, standardized tests, teams of trained examiners were sent into the schools to give both group- and individually-administered examinations. The tests were developed specifically for this study. They are not commercial, standardized tests. Their content is designed to reflect the language arts instructional objectives of Hawai'i's schools but not the particular terminology or materials employed in the HEP curriculum. It was the

Table 9

Hawai'i English Program Elementary Evaluation

Nomos Institute

June 1, 1976 - June 30, 1977



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intent of those developing these examinations to make them "curriculum-fair" and "objective-referenced." Copies of the exams are available in Supplement A to this report.

It should be noted that the design of this study does not provide for the comparison of "growth" (post-score minus pre-score) in HEP and non-HEP classes. Since our interest is directed toward long-term (over several years) impact of curriculum and since tracking of hundreds of individual pupils in a mobile population would have been both difficult and expensive, a "post-only" design is employed.

The analysis focuses on the identification of educationally-significant* differences in English language performance and the attitudes of pupils in HEP and non-HEP classes. In this type of comparative

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* The term "educationally significant" will be encountered throughout this report. Though the distinction between statistical and educational significance has been the subject of considerable technical literature, it may be well to explain the use of the term in this report.

When fairly large samples and reasonably reliable instruments are employed, it is likely that very small differences between statistics (such as arithmetic means) will be statistically significant, even at stringent alpha (significance) levels such as .05 or .01. Such small differences may be educationally trivial and of virtually no consequence for policy considerations. On the other hand, it is possible to obtain large, absolute differences that are not statistically significant at the traditional alpha levels, even though any reasonable interpretation would conclude that the differences have educational policy implications.

It should also be remembered that field studies, of the type reported here, do not provide experimental control over many influential variables. In particular, many social, economic, and even physical determinates of test scores serve to limit the potential effect of educational innovations. We have learned in the last 20 years that no single educational device (curricular change, teaching technique, etc.) can be expected to "compensate" for the effects of poor pre-natal care, bad housing, inadequate nutrition, and so forth. Therefore, the determination of the educational significance of an innovation must take uncontrolled variables into consideration.

Thus, statistical results, combined with choice of alpha level, consideration of the magnitude of the absolute differences, and judgment about the constraints on potential effects are used to assess <u>educational</u> significance.

analysis it is, of course, important to take into consideration variables such as socio-economic status and the number of years pupils have been exposed to the curricula. The analysis is addressed first to an investigation of the reliability of the measures and then to the comparison of the performance of pupils in the two types of classrooms.

III. METHODS

A. Instrument Development

The following instruments are used in this study:

1. Language Skills Test
2. Literature Test
3. Speaking and Listening Test
4. Functional Literacy Test
5. Language Systems Test
6. Student Attitude Questionnaire
7. Teacher Attitude Questionnaire
8. Parent Attitude Questionnaire
9. Classroom Observation Schedule
10. Student Interview Guide
11. Teacher Interview Guide

Several of these instruments underwent initial development for some time prior to the beginning of this study (Literature, Speaking and Listening, Student Attitude, Teacher Attitude, Classroom Observation Schedule). The attitude and observation measures extensively draw upon questions used in past studies so that changes in response may be investigated.

These partially developed measures were edited, revised, and then pilot-tested in the summer of 1976. Scoring procedures were also devised. The "HEP Observation Schedule Manual," a 22 page document that traces the history of the classroom observation plan and prescribes procedure, is included in Supplement A. Though several of the items in the observation schedule and the teacher

attitude questionnaire are considered by Nomos to be of poor quality or biased (item 24-33, 38), we were required to include them so that comparisons with earlier studies would be possible.

The Language Skills Test, developed through a contract between Pacific Region Planning and Research Center Inc. and D.O.E., was completed in October, 1976. The Functional Literacy Test, the Language Systems Test, and the interview guides were developed entirely by Nomos Institute. Separate reports on the development of these tests have been delivered.

B. Sampling Design

Professor Richard Jaeger of the University of North Carolina was employed as a consultant to design the sampling procedure for this study. We believe Professor Jaeger to be the leading authority on sampling statistics in educational research in the United States. Because the sampling plan is reasonably brief and self-explanatory, it is included here in its entirety:

Background and Objective

As a part of the evaluation of the Hawai'i English Program it is desired to compare the performance of students who have participated in the program and students who have not participated in the program on each of a number of specially developed tests and other measurement instruments. In addition to comparing the performance of all tested Hawai'i English Program (HEP) and non-HEP students, certain sub-groups of students are to be compared. It may be desired, for example, to compare the performance of HEP and non-HEP students who are members of low socio-economic status (SES) families, or to compare HEP and non-HEP recent immigrants to Hawai'i. It is definitely desired to compare HEP and non-HEP students in each of the seven sub-districts that compose the Hawai'i school system.

The purpose of this report is to propose a plan for sampling students so as to provide data for the balance of the HEP evaluation.

Sampling Units

Given the objectives of the HEP evaluation, three types of sampling units might be used: students, classes, or schools. Statistically, sampling of students would be more efficient than would sampling of classes or schools. That is, for a given level of estimation precision, fewer students would have to be tested if students, rather than intact classes or schools, were sampled. Based on state wide testing using the Stanford Achievement Test, a sampling frame of students could be developed with minimal expense.

When choosing among potential sampling units, factors other than statistical efficiency must be considered, however. Sampling students would require test administration in a great many fifth-grade classrooms, with a few students selected from a given classroom. Such a procedure, although statistically efficient, would be administratively disruptive and logistically complex. Test administrators would be needed in a great many schools, and travel costs and time requirements would be large. Teachers would be forced to provide make-up work for those few students who were sampled from their classes, or sampled students would be deprived of learning experiences that were provided non-sampled students in their classrooms. For these reasons, use of students as sampling units is not recommended for the HEP evaluation.

Using schools as sampling units would be administratively most efficient. Test administrators would be needed in a minimum of differing locations, and travel time and expense would be minimized. If all fifth-graders in sampled schools were tested, no students would be deprived of learning opportunities that were available to others. However, using schools as sampling units would be very inefficient from a statistical perspective. It is likely that the test performance of students in the same school is far less variable than the test performance of students in the entire population. Previous studies of variation in student performance on achievement tests have found considerable between-school variance. This indicates that within-school variance is appreciably smaller than total variance. Sampling schools therefore reduces the effective size of the sample of students tested, compared to a corresponding sample using students as units. Depending on the estimation method used, the reduction in effective sample size may be as much as ten to one.

An effective compromise that preserves much of the administrative convenience and efficiency of using schools as sampling units, and much of the statistical efficiency of using students as sampling units, is use of intact classes as sampling units. If classes were used as sampling units,

the number of schools in which testing would take place would be far smaller than would be the case if students were used as sampling units. Cost and time efficiencies result, since travel time and personnel costs would be reduced. Individual students would not be pulled out of classes for group-administered testing, and classroom disruption would be minimized. Statistical efficiency would be far greater than would be the case if schools were used as sampling units. It is therefore recommended that classes be used as sampling units in the HEP evaluation.

Although it is not yet known whether funds will be provided to include the neighbor islands in the sample, they are included in the sampling design as a preparation for that possibility(1). Thus the design can be applied to either (a) an O'ahu only sampling, or (b) a State wide sampling that includes the neighbor island districts.

If students are sampled only from subdistricts on O'ahu, generalization of results from this data to students outside O'ahu would not be warranted.

Specific Sampling Design

The sampling design recommended for the HEP evaluation is a stratified, modified single-stage cluster sampling design with fifth-grade classes as clusters. Within strata, it is recommended that simple random sampling (equal-probability) of HEP and non-HEP classes be used, with administration of a given group-administered test to an average of seventy-five percent of the students enrolled in sampled classes. Details of this design are provided below.

Since it is desired to form performance estimates for students in each of Hawai'i's seven subdistricts, separate samples of HEP and non-HEP classes will be drawn from each of the seven subdistricts. For estimation of the overall performance of HEP and non-HEP fifth-graders throughout the State, these subdistricts will be treated as strata.

Within each of the State's seven subdistricts, the first step is to secure a complete list of schools that contain fifth-grade classes, together with identification of each school as "low-SES, medium-SES, or high-SES", in accordance with SES definitions used in previous Hawai'i evaluation and assessment studies. Thus for each subdistrict, an exhaustive list of low-SES, medium-SES and high-SES schools that contained at least one fifth-grade class would be developed.

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(1) Approval for testing in the neighbor islands could not be obtained until two months after testing on O'ahu was completed. Since the results would have been non-comparable, neighbor island testing was not authorized.

Once these lists of schools were formed, complete, exhaustive lists of HEP and non-HEP fifth-grade classes within low-SES, medium-SES and high-SES schools in each subdistrict must be prepared. These lists would constitute the final sampling frames. Schematically, the sampling frames would be as follows:

Subdistrict 1

low-SES Schools		medium-SES Schools		high-SES Schools	
HEP classes grade five	non-HEP classes grade five	HEP classes grade five	non-HEP classes grade five	HEP classes grade five	non-HEP classes grade five
class 1 class 2 . .	etc.	etc.	etc.	etc.	etc.

Based on preliminary data presently available, it appears that very few non-HEP fifth-grade classes exist in the three subdistricts outside O'ahu. All non-HEP fifth-grade classrooms in these subdistricts should therefore be sampled. It is estimated that the number of fifth-grade non-HEP classes in these subdistricts are:

Maui	2 classes
Kaua'i	3 or 4 classes
Hawai'i	2 or 3 classes

At most then, assuming these figures are accurate, nine non-HEP classes would be sampled in subdistricts outside O'ahu.

Four HEP fifth-grade classes are to be sampled from each of the seven subdistricts, and four non-HEP fifth-grade classes are to be sampled from each of the four subdistricts of O'ahu. These sample sizes are based on previously-specified budget restrictions associated with the HEP evaluation, and a preliminary analysis of resulting statistical efficiency. Data needed to precisely determine the sizes of samples that would provide specified sampling precision are not available at present, and preliminary (and possibly erroneous) data must suffice.

Preliminary data on HEP and non-HEP enrollments in each of the seven subdistricts indicate that, although enrollments differ substantially, the sizes of required student samples, relative to the sizes of student populations, are not effectively different. Populations are in general so large relative to sample sizes that the finite-population sampling corrections will be minimal. Assuming near-equal within-stratum variances on the dependent variables of interest, equal-size cluster samples are indicated. This decision is reinforced by the desire to form estimates of performance within each subdistrict.

In all cases where sampling of fifth-grade classes is necessary, the procedure should be as follows:

1. Within each column of the class lists for each subdistrict (see schematic diagram above) number the classes sequentially, beginning with one.

2. Count the number of low-SES, medium-SES, and high-SES fifth-grade HEP classes within each subdistrict, and record the numbers.

3. Count the number of low-SES, medium-SES and high-SES fifth-grade non-HEP classes within each subdistrict and record the numbers.

4. If the subdistrict has at least one fifth-grade HEP class within each of the SES categories, two classes are to be sampled from the largest SES category and one class is to be sampled from each of the smaller SES categories. For example, if a subdistrict has five low-SES HEP classes, seven medium-SES HEP classes, and four high-SES classes, the sample would contain one low, two medium, and one high SES HEP classes from that subdistrict. If a subdistrict has fifth-grade HEP classes in only two SES categories, two classes are to be sampled from each category if possible. If one category has only one class, that class is to be sampled, and the size of the sample from the other category would be three. If a subdistrict has fifth-grade HEP classes in only one SES category, four classes are to be sampled from that category.

5. For non-HEP classes in a subdistrict, the sampling rules defined in step 4, above, are to be applied as stated, except in Maui, Kaua'i, and Hawai'i subdistricts, where all non-HEP fifth-grade classes are to be sampled.

6. To sample classes within a SES category within a subdistrict, a table of random numbers is to be used. Within a category, schools are to be chosen, randomly, without replacement, until the required is reached.

Administration of Tests Within Classes

Four group-administered tests and one individually-administered test are to be used at the beginning of the school year, and an additional group-administered test is to be used later in the school year. For purposes of further discussion, we shall number these tests from one to six, respectively.

In the design proposed, three group-administered tests are to be given to each student in three successive testing sessions at the beginning of the school year. It is proposed two test administrators be used for this purpose in each sampled class. There are four possible combinations of the four group-administered triples of tests to be used at the beginning of the school year. These are denoted by 123, 124, 134, 234. For each combination of tests, there are six possible permutations or orderings. For example, the 123 combination yields orderings 123, 132, 213, 231, 312, 321.

Since estimations of the correlation coefficients among test scores are desired as an outcome of the evaluation, the test administration design should provide for approximately equal-sized samples of students to be given each of the tests, and each pair of tests. It is not expected that test ordering will have an appreciable effect on test results, but ordering can be balanced without additional cost to protect against the possibility.

Two different combinations of the four tests are to be given to randomly-determined halves of each fifth-grade class. Thus a class might take the combination 123 and the combination 124, or 123 and 134, etc. In the sampling design described above, each permutation of each combination of the four tests designated 1, 2, 3 and 4 is to be used at least once.

To divide a class into halves, it will suffice to list students alphabetically, number the list, and place odd-numbered students into one half and even-numbered students into the other half.

The fifth test, the individually-administered test, is to be given to five randomly-sampled students in each sampled class. Five students from each class should be randomly sampled for administration of test five, using a random number table.

The sixth test should be administered to all students in classes sampled for administration of tests one through five.

Estimators of test means, item proportions, and estimator variances for use with the HEP sampling plan.

Notation:

H is number of strata ($H = 4$ districts in this case or 12 strata if SES strata within districts are used)

h is an index indicating stratum; $h = 1, 2, \ldots H$

N_h is number of classrooms in stratum h that enroll students in the reporting group of interest (e.g., HEP students)

n_h is the number of sampled classrooms in stratum h that enroll students in the reporting group of interest.

M_{hi} is the number of students who are members of the reporting group of interest who are enrolled in classroom i in stratum h.

j is an index representing a student who is a member of the reporting group of interest and is enrolled in classroom i in stratum h.

m_{hi} is the number of tested students who are members of the reporting group of interest and are enrolled in classroom i in stratum h.

Y_{hij} is the test (or item) score of the j-th student in the reporting group of interest enrolled in classroom i in stratum h.

$\bar{y}_{hi}$ is the sample average for students in the reporting group of interest who are enrolled (were tested) in classroom i in stratum h.

$\bar{y}_h$ is the sample average per classroom for students in the reporting group of interest who are enrolled in sampled classrooms in stratum h.

$\bar{M}_h$ is the average of enrollments of students who are members of the reporting group of interest in sampled classrooms in stratum h.

Estimator of the Mean or Proportion Correct

A ratio-to-size estimator of mean pupil performance on a given test, or proportion correct on a given item, for students in a reporting group is as follows:

$$\hat{\bar{Y}}_R = \frac{\sum_{h=1}^{H} \frac{N_h}{n_h} \sum_{i=1}^{n_h} M_{hi}\, \bar{y}_{hi}}{\sum_{h=1}^{H} \frac{N_h}{n_h} \sum_{i=1}^{n_h} n_{hi}}$$

where:

$$\bar{y}_{hi} = \sum_{j=1}^{n_{hi}} Y_{hij} \Big/ m_{hi}$$

Estimator of Estimator Variance:

An estimator of the variance of estimated mean (or proportion correct) performance is as follows:

$$\hat{V}\left(\hat{\bar{Y}}_R\right) = \left(\hat{\bar{Y}}_R\right)^2 \left[\frac{\hat{V}(N)}{N^2} + \frac{\hat{V}(D)}{D^2} - 2\,\frac{\hat{Cov}(N,D)}{N \cdot D} \right]$$

where: $\hat{\bar{Y}}_R$ is given in Equation (1), above;

$$N = \sum_{h=1}^{H} \frac{N_h}{n_h} \sum_{i=1}^{n_h} M_{hi}\ \bar{y}_{hi} \quad ;$$

$$D = \sum_{h=1}^{H} \frac{N_h}{n_h} \sum_{i=1}^{n_h} M_{hi} \quad ;$$

$$\hat{V}(N) = \sum_{h=1}^{H} N_h^2 \left\{ \frac{\left(1 - n_h/N_h\right)}{n_h} \sum_{i=1}^{n_h} \left[\frac{\left(M_{hi}\ \bar{y}_{hi} - \bar{y}_h\right)^2}{n_h - 1} + \frac{1}{N_h\ n_h} \sum_{i=1}^{n_h} \left[\frac{M_{hi}^2\ \left(1 - n_{hi}/M_{hi}\right) s_i^2}{m_{hi}} \right] \right] \right\} ,$$

where: $$s_i^2 = \left[\sum_{j=1}^{n_{hi}} \left(Y_{hij} - \bar{y}_{hi}\right)^2 \right] \Big/ \left(m_{hi} - 1\right) \quad ;$$

$$\hat{V}(D) = \sum_{h=1}^{H} N_h^2 \left(1 - \frac{n_h}{N_h}\right) \sum_{i=1}^{n_h} \frac{\left(M_{hi} - \bar{M}_h\right)^2}{n_h\ (n_h - 1)} \quad ;$$

$$\hat{Cov}(N,D) = \sum_{h=1}^{H} \left\{ \left(\frac{N_h}{n_h}\right)^2 n_h \left(1 - \frac{n_h}{N_h}\right) \left(\frac{1}{n_h - 1}\right) \sum_{i=1}^{n_h} \left[\left(n_{hi}\ \bar{y}_{hi} - \bar{y}_h\right) \left(M_{hi} - \bar{n}_h\right) \right] \right\} .$$

Approximate Confidence Interval:

An approximate 100 $(1 - \alpha)$% confidence interval on the test score mean (or an item proportion correct) is given by

$$\hat{\bar{Y}}_c \pm z_{1 - x/z} \left[\hat{V}\left(\hat{\bar{Y}}_R\right)\right]^{x/z}$$

where $z_{i - x/z}$ denotes the 100 $(1 - x/z)$ percentile of the unit normal distribution for a 95% confidence interval, $z_{i - x/z} = 1.96$.

A list of schools and classes in the sample is given in Supplement A.

C. Examiner and Observer Training

The training of examiners was conducted on Friday, October 22, and Monday, October 25, 1976. Six examiners and two alternates were trained. The examiners were given a brief history of HEP, as well as an overview of the evaluation design that included the development of test instruments and the sampling procedures. Procedures for scheduling schools were explained, including explaining logistics to the principals in advance so that they would be prepared. The examiners were trained in procedures to be followed upon entering the class, i.e., how the class was to be divided into two groups after randomly selecting five students to be individually tested, and what the teacher's role and responsibilities would be. The six examiners organized themselves into two teams, each headed by a leader. The team leaders had responsibility for logistics, orgnaization and distribution of materials, arranging transportation, and contacting an alternate if a team member were absent.

Each examiner received a copy of all the instruments, went through each one, asked questions and tried to anticipate any potential problems. The random, pre-assigned sequence of test administration was explained. Each examiner was provided with his own Examiner's Manual with specific instructions on each step to be followed. New answer sheets were designed for the individual tests. Finally, procedures for quality-control and filing of completed instruments were explained and demonstrated.

Three classroom observers were used in the first round of observation, and two were used in the second round. Training for the first series of observations was conducted in a meeting of

observers in which the Observation Schedule and the Observation Schedule Manual (see Supplement A) were discussed. The observers looked over each item on the Observation Schedule, and attention was given to those sections of the manual that described procedures. The items that required a count of students engaged in certain defined activities during the three five-minute periods were discussed in detail. This training period continued until the three observers were in agreement as to the way the observations were to be conducted in the classrooms. Training for the second round was identical, and consisted of a discussion of the Observation Schedule. and the Manual by an observer used during the first round, and a new observer employed during the second round. The experienced observer was also able to describe procedures during the initial in-class observation of the new observer.

Four examiners were used for the administration of the Language Systems Test (mid-April to mid-May). In a brief training session, these examiners looked over the test, and raised questions concerning any areas of uncertainty about it. Procedures to be used were also explained at that time. Schedules for the test were posted, and the examiners were divided into two teams for testing.

During the training session, examiners were also instructed in the use of the Teacher and Student Interviews that were to be administered simultaneously with the Language Systems Test. Attention was given to specific procedures to be followed in the presentation of free-response questions. The appropriate methods to be used in the recording of responses to the interviews were also discussed and potential problems that might arise during the interviews were described.

D. Data Collection

As specified in the sampling plan, four HEP and four non-HEP fifth-grade classes in each of the four O'ahu school districts were selected for testing from a list of fifth-grade public school classes provided by the D.O.E. The D.O.E. sent a letter explaining the HEP evaluation to the principals of all elementary schools containing a fifth-grade class. Nomos sent another letter to the principal of each school in the sample explaining in detail the procedures that would be followed in their schools and requesting their cooperation. This letter was followed by a telephone call to schedule a morning of testing for each sample class. The school was informed that three examiners would be used, that they would need a class list and an estimate for each student of parent occupation based on a list of six occupational categories. Two or three rooms were requested for testing. The testing procedure was explained again at this time. It was suggested that students have books available to keep them busy in case of waiting time.

When the examiners arrived at the school, they checked in at the office and were directed to the specified classroom. The first step was to get a copy of the class list, number it, and select five pupils according to predetermined randomized numbers for individual testing. The remainder of the class was randomly divided into two groups.

These two groups were administered three of the following four group tests: 1 = Student Attitude, 2 = Literature, 3 = Functional Literacy, 4 = Language Skills. The three group tests were chosen and administered according to a predetermined random sequence. If

the sequence made it possible to administer the same test to both groups simultaneously (i.e., $\begin{matrix}2 & 2\\ 1 & 1\\ 3 & 4\end{matrix}$), then that was done. Otherwise the groups were separated into different rooms (or areas). The five students selected for individual testing were given the following sub-tests: Maps, Questions and Negatives, Phrases, Multiple Meanings, Directions, Communications, Spelling, and Sentence/Paragraph Reading. All the answers for these tests were recorded by the examiner on a special two-page answer sheet. Because these sub-tests were administered individually, each student had to wait until an examiner was available. These five students also took the Student Attitude Questionnaire. On the Student Attitude Questionnaire the students were asked to circle the number of years they had been in HEP from 1-6, counting the current year as one and including Kindergarten. If the pupils were not taking the Student Attitude Questionnaire, they were asked to fill in this information on the front of one of the other group tests (Literature or Functional Literacy).

Each teacher was asked to estimate the parent's occupational category for each pupil. This was done to obtain an estimate of socio-economic status while safe-guarding privacy. The procedure was to place beside each pupil's name a number from 1-6 which most nearly corresponded to one of the following occupational categories:

1. Professional
2. Proprietors, Managers and Officials
3. Clerks and similar occupations
4. Skilled Workers and Foreman
5. Semi-skilled Workers
6. Unskilled Workers

If the class was HEP, the teacher was also asked to complete a Teacher Attitude Questionnaire, to distribute and collect Parent

Questionnaires, and mail these back to Nomos in a stamped, self-addressed envelope provided.

The Student Attitude Questionnaire was read aloud by the examiner, item by item, so a student's reading ability would not influence the results. The entire Literature Test was also read aloud by the examiner, allowing the students time to answer as they went along, with extra time at the end for pupils to go back over an item or passage. For the Functional Literacy Test the students were on their own. The examiner explained the directions and any items that could cause potential problems (i.e., item 6 is not multiple choice, so just circle the correct answer in the list; the last sheet is copied from the yellow pages of the phone book although it is not yellow). The sentences for the Punctuation and Capitalization sub-test were read aloud to the group. The Reading Comprehension sub-test was read silently by pupils and answered after directions were given. The Purposeful Writing sub-test instructions were carefully explained by the examiner, then pupils composed letters to friends according to the instructions.

At the completion of testing, the tests were separated by group (odd, even, or individual) and a cover sheet was filled out with the following information: District, School, Teacher, HEP or non-HEP, Examiner, and sequence-of-tests administered. If the class chosen at random happened to be a combined 4-5-6, then all students were tested. Pupils were excused from testing if they were certified Learning Disabled (LD) and the teacher felt it was useless for them to take the tests. Some recent-immigrant pupils who had virtually no English were also excused.

Parent Attitude Questionnaires that were not completed by parents during the initial round of classroom observations, were again distributed to the teachers in January and February of 1977. This process was repeated in April and May of 1977 at the time of the administration of the Language Systems Test so that a final "return rate" of 95.3% ($\underline{N}$ = 385) of the questionnaires were returned to Nomos for analysis.

Observations of the selected HEP classrooms were made on two occasions: first, during January or February of 1977, and second, during April or May of 1977. Only one observer was present in the first series of observations. In the second series, which occured immediately prior to the administration of the Language Systems Test and the Student and Teacher Interviews, two trained observers were present. One observer completed the Observation Schedule during the second series, while the other was available for assistance if necessary. When the observers arrived at the school, they were directed to the classroom by office personnel. The observers introduced themselves to the teacher, and explained the procedure to be followed during the observation period. Items on the Observation Schedule to be answered by the teacher were completed at this time. In most schools, the observers were introduced to the students, who were told of the nature of the visit. The observers then watched the class proceed as unobtrusively as possible. During the three five-minute periods in which tallies were made of student activities, the observer sometimes walked through the classroom. If it were not clear what a particular student was doing, the observer asked the student. Most observation periods lasted for one hour. In the

second round of observations, HEP periods were sometimes limited to less than one hour, and therefore cut short, in order to have time for the administration of the Language Systems Test and the Student Interviews.

The Language Systems Test was administered to the selected HEP and non-HEP classes in April and May of 1977. Only those students who took the group tests in the fall of 1976 were administered the Language Systems Test. The class lists from the original group tests were used to determine which students were to take the Language Systems Test, and tests were administered by one examiner to the students in their classrooms. Scores for those students who were new in the selected classes since the fall of 1976 were not included in the data when it was analyzed by Nomos.

At the same time that the Language Systems Test was given, the Student Interviews were administered by the other examiner to those students who took the individual tests in the fall of 1976. The sample of students used as respondents to the interview is a random, though small, sample of HEP and non-HEP students. When instructions were given to the class regarding the Language Systems Test, the five students to be interviewed were asked to occupy themselves quietly while they awaited their turn. Students were interviewed in alphabetical order in a corner of the classroom, or, in some cases, in a separate room. Because of time limitations (administration of the Language Systems Test took approximately 30 minutes per class), in some classes not all five students were interviewed ($\overline{X}$ per class for HEP = 3.2, $\underline{N}$ = 48; $\overline{X}$ per class for non-HEP = 4.4; $\underline{N}$ = 71). Interviewers reported that the average student interview lasted

five-minutes or less, and that many - if not most - students were not talkative (particularly when asked to make qualitative judgments about language work).

The Teacher Interviews were also conducted during the time alloted for the administration of the Language Systems Test. In most cases, the teacher was interviewed prior to the students. The interviewers reported that the interviews with teachers in most cases lasted between ten and fifteen minutes.

E. Scoring

For scoring purposes, two types of test questions are identified: "objective" and "variable." "Objectively" scored items are those, such as multiple choice, that can be coded by key-punching into punch-card from directly from the students' responses. The scoring of such items can be completed by data-processing.

The "variable items" are those that require a judgment or rating of the student response. These ratings are then coded for data-processing.

The Student Attitude Questionnaire consists of 25 statements to which the student responded: Strongly Agree (4), Agree (3), Disagree (2), or Strongly Disagree (1). It indicated a positive attitude (the polarity of the statement was taken into account in the scoring program).

The Literature Test includes seven multiple choice (objective) items that were directly coded. Items #4, 9, 12, 13, 14 and 15 were rated 0 - 3: zero = no response or something unintelligible; 1 = responsive but incomplete or incorrect in detail; 2 = essentially

complete and/or correct in detail; 3 = highly analytical, perhaps drawing upon outside knowledge and experience to embellish the answer. Items #8 and 11 only receive credit if the subsequent "why" question explained or supported the answer. Each student response was rated by a single trained scorer.

The Functional Literacy Test consists of 19 items, 17 of which were directly coded (objective). For the variable items, item #9: 0 = no response; 1 = something in the right position or anywhere on envelope; 2 = right position but incomplete or incorrect order; 3 = right position and enough information so that the post office could understand; question #15: 0 = no response; 1 = some items filled in; 2 = fairly complete; and 3 = functional level -- acceptable to the store.

The Language Skills Tests includes three sub-tests. On Punctuation and Capitalization there are 11 sentences for which the student is to put in all appropriate punctuation and capitalization. The sentence must be completely correct to get one point.

Reading Comprehension has 23 multiple choice items which are directly coded (objective).

The instructions to the Purposeful Writing Test give the student certain information to include in two letters they are to write to an imaginary friend. A zero indicates no response; 1 = some attempt made; 2 = fairly good (maybe some items left out but grammar correct, or poor grammar but all items included); and 3 = all necessary information included with correct word usage.

There are eight individually-administered tests. Each answer is marked correct or incorrect by the examiner on an answer sheet

during the testing with the exception of Spelling which is graded upon completion of a block of words to determine whether a base or ceiling has been reached. The number of the highest block of words completed with five or more errors is noted on the answer sheet. There are six blocks.

The Language Systems Test consists of 13 questions that are all objectively scored. Item 4 has a total possible score of ten points; item 5 has five possible points; item 6 has 11 possible; item 7 and 12 each have four possible; and item 13 has ten possible points. All others are scored as correct or incorrect, and have a possible score of one.

The Observation Schedule is scored to yield a "degree-of-implementation" index with a maximum total of 25 points. Items are weighted, and some receive no score. The complete scoring procedure is reported in the Observation Schedule Manual, included in Supplement A.

To assess the reliability of the scores of free-response questions, an inter-rater reliability sub-study was conducted. Four persons were selected to independently score students test papers from two schools. The number of students who had taken the respective HEP language tests in these two schools is given in Table 10.

TABLE 10

Test	Number of Students
Literature Test	24
Functional Literacy	37
Purposeful Writing	33

The four scorers had been involved in observation work in the HEP classrooms. They were instructed to score the tests in accord with the scoring routine prescribed for the regular HEP test scoring. These scores were then analyzed to assess the proportion of agreement in the results.

As the range of possible scores for each free-response item, zero to three, constituted four separate possible scores, and there were four independent scorers, a matrix was constructed to record all possible score patterns. Given these parameters, there were five patterns of possible scores per item.

(a) The four raters could each rate the same child's item differently. This would constitute 0% agreement among raters for that item.

(b) Two raters could agree on one score, another rater could assign a second score, while the fourth could assign still another score. This would constitute 25% agreement between raters for that item.

(c) Two raters could agree on one score, while the other two raters could agree to a second. This would constitute 50% agreement among raters for a given item.

(d) Three raters could agree on one score, while the fourth could rate a second score. This could constitute 75% agreement between raters for the item.

(e) The four raters could all rate the child's response the same. This would of course constitute 100% agreement among the raters for an item.

The independent ratings of the children's responses were indexed from zero to four along this five stage "ladder" of agreement for each respective exam item. Thus, for example, if two raters rated the literature test exam item No. 4 the same, while the other two agreed to a different score, an index of "two" ($A_i = 2$) was assigned.

To calculate the rater's ratio of agreement for all students for each item, these index numbers are summed across students, and this sum divided by the number of students multiplied by the number of possible scores, four.

This is expressed as:

$$\frac{\sum_{i=1}^{N_s} A_i}{N_s \times 4} = \%A_i$$

Where: $\%A_i$ represents proportion of agreement among raters per item, A_i represents the index of agreement for each item, and where N_s represents the total number of students.

Table 11 presents the proportion of agreement among raters for all free-response exam items.

TABLE 11

Item	Proportion of Agreement ($\%A_i$)
Literature Test - item 4	80%
Literature Test - item 9	84%
Literature Test - item 12	75%
Literature Test - item 13	79%

TABLE 11 (cont'd)

Test	Proportion of Agreement ($\%A_i$)
Literature Test - item 14	63%
Literature Test - item 15	89%
Functional Literacy Test - item 9	91%
Functional Literacy Test - item 15	99%
Purposeful Writing - item 1	83%
Purposeful Writing - item 2	71%

To calculate the average proportion of agreement within a test, we sum the proportion of agreement per item, within the test and divide by the number of test items.

This is expressed as:

$$\frac{\sum_{i=1}^{N_i} \%A_i}{N_i} = \%A_t$$

Where: $\%A_t$ represents the average proportion of agreement among raters for each test, $\%A_i$ represents the proportion of agreement among raters for each item, and where N_i represents the total number of items for each test.

Table 12 shows the proportion of agreement among raters for the various tests.

TABLE 12

Test Type	Proportion of Agreement ($\%A_t$)
Literature Test	78%
Functional Literacy	95%
Purposeful Writing	77%

Finally, to calculate the average proportion of agreement among raters overall across tests, we sum the proportion of agreement across the tests, and divide by the number of tests.

This is expressed as:

$$\frac{\sum_{t=1}^{N_t} \%A_t}{N_t} = \%A_o$$

Where: $\%A_o$ represents the average proportion of agreement across tests, $\%A_t$ represents the proportion of agreement within tests, and where N_t represents the number of tests.

The overall average proportion of agreement among raters was 83%.

F. Analysis Plan

The first stage of the analysis is directed toward an examination of each of the tests administered and to the socio-economic status of the HEP and non-HEP samples. For each test, an item analysis and reliability index is calculated. For each question a difficulty index (proportion correct for binary items and mean score for variable items) is calculated and the item-total score correlation is calculated. The total mean score and standard deviation is also reported. The alpha reliability coefficient (reported separately for binary and variable items when appropriate) is given for each test and major sub-test.

Since socio-economic status is usually such an important correlate of achievement, the mean SES, standard deviation, range, and N for the HEP and non-HEP samples are reported.

For each test (total score), results are reported by district and socio-economic level (SES in approximately equal thirds). In each of these categories and totals, the mean, standard deviation, range and N are reported.

A major interest of this study is curricular effects (HEP vs. non-HEP) on achievement. Such effects may be masked in total scores by performance on one type of question that is improved by one curriculum while student performance on another type of question (in the same test) is improved by the other curriculum. To permit a study of student performance question by question, an analysis is made of student responses to each question of each test, by district, curriculum (HEP vs. non-HEP), and SES level. Chi square tests were used to help identify differences in student performance among these

categories.

As an aid to interpretation of the results, an analysis of total test score, HEP vs. non-HEP, is made using covariance-adjusted means. Each total test score mean (HEP vs. non-HEP) is adjusted for any differences on the socio-economic measure between the two groups.

The correlation of each test with every other test is given. This analysis reflects not only the degree to which tests may overlap in type of student achievement measured but also gives some additional information about the reliability of the various examinations. The results of the two classroom observations are summarized as are the responses given on the Teacher Questionnaire.

An analysis of the students' number of years in HEP is presented. As in the analysis of the tests, results are given by district and by SES.

To relate the degree of implementation to the mean test scores and SES of each HEP classroom, regression lines are presented. It is the opinion of Nomos that many of the items on the Observation Schedule have little or no face validity, so that these results are presented with reservation (see comment on page 41).

IV. RESULTS

The results presented on the next pages are given without interpretation to enable the reader to examine them without any influence we might introduce. Our discussion of these results is given in the following chapter.

The distribution of socio-economic status (SES) scores in the various categories of analysis is displayed in Table 13. Each student was assigned a score from one to six based on the teachers' estimate of the parents occupational category (see page 54). The average SES scores of the students in various categories are given in the table.

The correlation of each test with all others is presented in Table 14 and Table 15 .

In the tables that follow, results are given for each test administered. The item analysis and reliability results are given in the first table for each test. The mean (average), median, standard deviation, range, and N for HEP and non-HEP by district and SES level are displayed next. Achievement means, adjusted for any SES difference among the groups, are given for each test next. Tests of covariance assumptions and plots of regression lines are given in Supplement A. Item results are presented in the following table. Here, some scores are expressed as negative scores (see Table 25, items 1 and 2; Table 38, items 4, 9, 12, 13, 14, and 15; Table 43, items 9 and 15; and Table 85, all items). These are z scores (units of the normal curve) for the variably-scored items. All other scores indicate the percent correct for the items.

Following the tables for test results, the summaries of classroom observations and responses to the teacher questionnaire are presented.

Results of interviews with teachers and pupils are given next. The answers given to interviewers were content-analyzed and tabulated. Figures shown sum to the total number of responses, and not the number of respondents. (Of 17 teachers in the HEP sample, 13 were interviewed, and of 16 teachers in the non-HEP sample, 15 were interviewed.) These results are presented in Tables 88 through 111.

Results from the questionnaire sent to HEP parents are given in Tables 112 through 154. These tables summarize the responses to each question by district and by SES category.

The "degree-of-implementation" scores, derived from the classroom observations, are plotted in relation to class averages on achievement tests, SES, and student attitude. The plots are shown in Figures 1 through 9. These regression plots are based on 15 of the 16 HEP classes. The one class not included scored extremely low on degree-of-implementation because the teacher was using a modified version of HEP during both observation periods. The regression of degree-of-implementation with the means of all 16 classes is included in Supplement A.

"Number-of-years-in-HEP" is summarized and reported by district and SES categories in Tables 155 and 156.

TABLE 13

TOTAL SCORE STATISTICS: SOCIO-ECONOMIC STATUS INDEX*

			DISTRICT									
			HONOLULU		WINDWARD		CENTRAL		LEEWARD		TOTAL	
			HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
SES	LOW	$\bar{X}$	5.66	5.46	5.48	5.39	5.60	5.50	5.33	5.16	5.54	5.38
		S.D.	.47	.50	.50	.49	.49	.50	.47	.36	.50	.49
		R	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6
		N	35	24	29	18	40	20	21	19	125	81
	MED.	$\bar{X}$	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
		S.D.	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
		R	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4	4-4
		N	22	16	16	27	21	19	38	19	97	81
	HIGH	$\bar{X}$	2.43	2.09	2.14	1.62	2.64	1.83	2.44	2.34	2.38	1.96
		S.D.	.82	.77	.69	.69	.64	.98	.80	.86	.78	.89
		R	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3
		N	23	35	22	34	11	46	25	35	81	150
TOTAL		$\bar{X}$	4.28	3.57	4.03	3.29	4.68	3.18	3.87	3.51	4.20	3.38
		S.D.	1.46	1.60	1.54	1.62	1.20	1.73	1.18	1.35	1.38	1.60
		R	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6
		N	80	75	67	79	72	85	84	73	303	312

(R = range) *Scores are inversely related to SES (high scores reflect low-SES).

Table 14

Intercorrelation of group tests, SES, number of years in HEP, student attitude, and parents' opinion of HEP (Parent Questionnaire Item 10)

	SES		Language Systems		Parents' Opinion		Student Attitude		Liter-ature		Functional Literacy		Language Skills	
	r	n	r	n	r	n	r	n	r	n	r	n	r	n
SES *														
Language Systems	.29	530												
Parents' Opinion	.18	210	.05	174										
Student Attitude	.10	474	.19	393	-.05	149								
Literature	.39	435	.40	366	.03	156	.15	303						
Functional Literacy	.42	477	.50	392	.10	131	.18	347	.67	310				
Language Skills	.44	460	.49	399	.01	139	.30	325	.63	288	.69	331		
Number of Years	.06	237	.16	203	.01	149	.03	247	.22	191	.22	142	.09	160

* SES scores reversed to provide non-negative correlations.

Table 15

Intercorrelation of individual tests, SES, number of years in HEP, and parents' opinion of HEP (Parent Questionnaire Item 10)

	SES		Parents' Opinion		Number of Years		Spelling		Sentence and Paragraph Reading	
	r	n	r	n	r	n	r	n	r	n
SES *										
Parents' Opinion	.29	50								
Number of Years	.10	75	.04	52						
Spelling	.15	144	.11	50	.10	77				
Sentence and Paragraph Reading	.30	147	.21	50	.16	76	.59	142		
Speaking and Listening	.29	155	.25	52	.13	80	.42	149	.59	152

* SES scores reversed to provide non-negative correlations.

Table 16

Item Analysis

Test: Reading Comprehension

Item Number	Difficulty or Mean	Correlation with Total
1	.97	.27
2	.80	.36
3	.82	.41
4	.71	.50
5	.82	.33
6	.89	.52
7	.87	.42
8	.82	.33
9	.92	.43
10	.76	.45
11	.81	.48
12	.63	.38
13	.85	.44
14	.86	.56
15	.25	.27
16	.68	.43
17	.85	.48
18	.74	.47
19	.78	.45
20	.74	.45
21	.43	.38
22	.58	.54
23	.79	.45

Maximum Total Score: 23 S.D.: 4.08

Mean: 17.36 Alpha (Multiple Choice): .81

Table 17

Reading Comprehension

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	17.44	17.98	18.60	17.10	16.10	16.29	17.32	17.73	17.41	17.32
Mdn	18.38	18.78	19.56	17.95	16.50	17.50	18.13	18.81	18.36	18.26
S.D.	3.76	3.57	3.84	3.96	4.61	4.83	3.54	4.08	3.99	4.17
R	6-23	6-23	5-23	4-22	4-23	5-23	6-23	5-23	4-23	4-23
N	52	55	57	59	48	52	76	74	233	240

Table 18

Reading Comprehension

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	15.96	14.87	18.11	17.54	19.33	18.74
Mdn	16.71	15.50	17.50	18.00	20.21	19.61
S.D.	4.40	4.77	2.46	3.22	3.01	3.54
R	4-22	5-22	11-23	5-23	11-23	4-23
N	95	62	64	68	64	106

Totals	Low SES	Med SES	High SES
$\bar{X}$	15.53	17.82	18.96
Mdn	16.09	18.09	19.77
S.D.	4.58	2.89	3.36
R	4-22	5-23	4-23
N	157	132	170

TABLE 19

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

READING COMPREHENSION

	HEP	NON-HEP
Raw Score Mean	17.41	17.32
Adjusted Mean	17.94	17.01
N=	223	236

TABLE 20

ANALYSIS OF ITEM PERFORMANCE:

READING COMPREHENSION TEST

SES LEVEL

ITEM NO.	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.93	.98	.97	1.00	.98	.97	.95	.98
2	.78	.68	.80	.82	.92	.82	.82	.78
3	.71	.74	.78	.88	.88	.90	.78	.85
4	.59	.68	.81	.69	.86	.73	.73	.76
5	.70	.73	.91	.93	.88	.90	.81	.86
6	.82	.77	.94	.91	.95	.94	.89	.89
7	.87	.77	.88	.88	.95	.89	.90	.86
8	.79	.71	.94	.87	.84	.89	.81	.83
9	.86	.85	.97	.96	.97	.96	.92	.93
10	.71	.65	.84	.75	.81	.84	.78	.76
11	.82	.63	.91	.82	.89	.82	.86	.77
12	.64	.45	.75	.51	.80	.64	.72	.56
13	.80	.77	.95	.79	.89	.92	.87	.85
14	.77	.69	.97	.90	.97	.92	.88	.86
15	.14	.23	.30	.18	.28	.34	.23	.26
16	.66	.55	.64	.63	.75	.83	.68	.70
17	.78	.71	.94	.90	.95	.90	.87	.85
18	.70	.53	.69	.76	.89	.85	.75	.74
19	.74	.69	.83	.81	.84	.79	.80	.77
20	.66	.63	.73	.81	.84	.80	.73	.76
21	.41	.34	.38	.44	.47	.50	.42	.44
22	.46	.37	.58	.54	.80	.73	.59	.58
23	.71	.71	.77	.75	.91	.86	.78	.79

TABLE 21

ITEM ANALYSIS

TEST: PURPOSEFUL WRITING

ITEM NUMBER	DIFFICULTY OR MEAN	CORRELATION WITH TOTAL
1	2.31	.86
2	2.11	.86

MAXIMUM TOTAL SCORE: 6 S.D.: 1.16

MEAN: 4.42 ALPHA (Variable): .65

Table 22

Purposeful Writing

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	4.00	4.15	4.47	4.75	4.33	4.23	4.60	4.54	4.38	4.46
Mdn	4.04	4.14	4.56	4.52	4.26	4.20	4.67	4.69	4.38	4.49
S.D.	1.13	1.17	1.55	1.20	1.18	0.91	0.93	1.01	1.22	1.11
R	1-6	0-6	0-6	2-6	2-6	2-6	2-6	2-6	0-6	0-6
N	52	55	57	59	48	52	76	74	233	240

Table 23

Purposeful Writing

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	4.00	3.79	4.45	4.65	5.00	4.76
Mdn	4.10	3.86	4.42	4.55	5.09	5.08
S.D.	1.23	1.19	1.13	0.95	0.95	0.96
R	0-6	0-6	0-6	2-6	2-6	2-6
N	95	62	64	68	64	106

Totals	Low SES	Med SES	High SES
$\bar{X}$	3.92	4.55	4.85
Mdn	4.02	4.39	4.90
S.D.	1.22	1.05	0.96
R	0-6	0-6	2-6
N	157	132	170

TABLE 24

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

PURPOSEFUL WRITING

	HEP	NON-HEP
Raw Score Mean	4.38	4.46
Adjusted Mean	4.53	4.37
N =	223	236

TABLE 25

ANALYSIS OF ITEM PERFORMANCE

PURPOSEFUL WRITING TEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	-.31	-.46	-.01	.10	.40	.24	-.02	.02
2	-.33	-.53	.01	.19	.42	.23	-.02	.02

Table 26

Item Analysis

Test: Punctuation & Capitalization

Item Number	Difficulty or Mean	Correlation with Total
1	.66	.52
2	.14	.38
3	.26	.41
4	.05	.18
5	.20	.43
6	.08	.39
7	.03	.19
8	.19	.48
9	.04	.33
10	.03	.30
11	.29	.38

Maximum Total Score: 11 S.D.: 1.74

Mean: 2.56 Alpha: .70

Table 27

Punctuation and Capitalization

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	1.77	2.20	2.42	2.19	1.79	1.73	1.47	2.26	1.84	2.11
Mdn	1.63	1.82	1.47	1.75	1.14	1.13	1.13	2.12	1.30	1.71
S.D.	1.48	1.85	2.47	1.87	2.04	1.88	1.46	1.67	1.91	1.82
R	0-6	0-7	0-9	0-7	0-9	0-8	0-7	0-6	0-9	0-8
N	52	55	57	59	48	52	76	74	233	240

Table 28

Punctuation & Capitalization

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	1.24	1.47	1.83	1.99	2.80	2.64
Mdn	0.90	0.94	1.35	1.50	2.20	2.86
S.D.	1.38	1.70	1.72	1.61	2.31	1.86
R	0-6	0-6	0-9	0-6	0-9	0-8
N	95	62	64	68	64	106

Totals	Low SES	Med SES	High SES
$\bar{X}$	1.33	1.91	2.70
Mdn	0.92	1.32	2.28
S.D.	2.04	1.67	1.52
R	0-6	0-9	0-9
N	157	132	170

TABLE 29

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

PUNCTUATION & CAPITALIZATION

	HEP	NON-HEP
Raw Score Mean	1.84	2.11
Adjusted Mean	2.03	1.98
N=	223	236

TABLE 30

ANALYSIS OF ITEM PERFORMANCE:

PUNCTUATION AND CAPITALIZATION TEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.46	.55	.78	.69	.81	.77	.65	.69
2	.05	.13	.16	.10	.27	.16	.14	.14
3	.15	.18	.27	.32	.25	.41	.21	.32
4	.04	.05	.05	.07	.08	.04	.05	.05
5	.16	.11	.13	.21	.39	.24	.22	.19
6	.02	.06	.03	.07	.19	.10	.07	.08
7	.01	.02	.03	.03	.05	.06	.03	.04
8	.09	.13	.13	.18	.22	.35	.15	.24
9	.01	.02	.03	.01	.11	.07	.05	.04
10	.00	.02	.02	.06	.08	.04	.03	.04
11	.27	.21	.22	.24	.36	.42	.28	.31

Table 31

Language Skills (Total Score)

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	23.21	24.33	25.49	24.03	22.23	22.25	23.41	24.62	23.63	23.90
Mdn	24.00	24.25	26.00	24.43	22.17	22.75	23.79	25.30	23.97	24.35
S.D.	5.22	5.45	6.73	5.78	6.76	6.68	4.86	5.79	5.97	5.99
R	7-32	9-35	7-37	8-35	6-35	7-34	9-35	8-34	6-37	7-35
N	52	55	57	59	48	52	76	74	233	240

Table 32

Language Skills (Total Score)

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	21.20	20.13	24.39	24.18	27.13	26.14
Mdn	21.81	20.33	24.28	24.06	26.90	27.00
S.D.	6.04	6.42	3.66	4.54	5.09	5.27
R	6-32	7-33	16-35	9-33	16-37	9-35
N	95	62	64	68	64	106

Totals	Low SES	Med SES	High SES
$\bar{X}$	20.78	24.78	26.51
Mdn	21.44	23.89	26.97
S.D.	5.23	4.14	6.22
R	6-33	9-35	9-37
N	157	132	170

TABLE 33

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

LANGUAGE SKILLS

	HEP	NON-HEP
Raw Score Mean	23.63	23.90
Adjusted Mean	24.49	23.36
N=	223	236

Table 34

Item Analysis

Test: Literature

Item Number	Difficulty or Mean	Correlation with Total
1	.65	.57
2	.45	.42
3	.96	.42
* 4	1.39	.62
5	.83	.53
6	.88	.60
7	.87	.53
8	.80	.43
* 9	1.16	.67
10	.79	.55
11	deleted	
* 12	1.05	.62
* 13	.97	.67
* 14	1.09	.66
* 15	1.58	.70

Maximum Total Score: 26

S.D.: 3.77

Mean: 13.46

Alpha (Variable): .73

Alpha (Multiple Choice): .56

* = Variably-scored Item

Table 35

Literature

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	13.11	14.55	12.76	13.44	13.19	13.83	13.60	13.69	13.19	13.84
Mdn	14.63	14.50	13.63	13.67	13.50	15.39	14.18	14.17	14.06	14.53
S.D.	4.09	2.90	3.88	2.79	4.06	4.76	3.21	3.52	3.81	3.68
R	3-19	7-20	2-18	7-19	1-20	3-21	3-19	4-19	1-20	3-21
N	63	38	53	48	62	54	75	48	263	188

Table 36

Literature

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	11.72	11.57	14.02	13.07	15.08	15.36
Mdn	12.74	11.38	14.45	13.40	15.50	15.66
S.D.	4.21	3.78	2.35	3.71	2.27	2.70
R	1-19	4-19	0-12	3-20	8-20	7-21
N	100	44	83	46	66	96

Totals	Low SES	Med SES	High SES
$\bar{X}$	11.67	13.68	15.25
Mdn	12.30	14.11	15.58
S.D.	4.09	3.37	2.54
R	1-19	3-20	7-21
N	144	129	162

TABLE 37

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

LITERATURE

	HEP	NON-HEP
Raw Score Mean	13.19	13.84
Adjusted Mean	13.76	13.39
N=	249	186

TABLE 38

ANALYSIS OF ITEM PERFORMANCE:

LITERATURE TEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.54	.48	.65	.59	.80	.80	.65	.67
2	.41	.48	.48	.48	.44	.46	.44	.47
3	.93	.91	1.00	.89	1.00	.98	.97	.94
4	-.24	-.42	.04	.07	.21	.23	-.03	.04
5	.77	.77	.83	.80	.97	.89	.84	.84
6	.77	.80	.89	.91	1.00	.93	.87	.89
7	.85	.82	.87	.80	.95	.92	.88	.87
8	.72	.77	.90	.76	.83	.85	.81	.81
9	-.38	-.05	-.08	-.03	.17	.41	-.15	.19
10	.68	.61	.84	.83	.88	.87	.79	.80
11	Deleted							
12	-.26	-.14	.13	-.20	.27	.13	.01	.02
13	-.27	-.24	.08	-.01	.16	.21	-.04	.05
14	.26	-.57	.15	-.18	.16	.37	-.01	.01
15	-.22	-.57	.07	-.10	.40	.20	.04	-.06

Table 39

Item Analysis

Test: Functional Literacy

Item Number	Difficulty or Mean	Correlation with Total
1	.46	.35
2	.91	.36
3	.69	.45
4	.38	.41
5	.76	.45
6	.41	.54
7	.60	.54
8	.49	.51
* 9	2.03	.91
10	.74	.48
11	.73	.45
12	.50	.41
13	.17	.02
14	.29	.32
* 15	2.40	.81
16	.58	.42
17	.51	.57
18	.45	.50
19	.51	.53

Maximum Total Score: 23

S.D.: 4.46

Mean: 13.67

Alpha (Variable): .64

Alpha (Multiple Choice): .73

* = Variably-scored items

Table 40

Functional Literacy

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	12.83	15.01	13.73	13.73	12.52	13.28	13.70	13.86	13.13	13.98
Mdn	13.25	14.72	14.20	13.44	12.40	13.17	14.00	14.63	13.61	14.05
S.D.	3.86	4.57	4.57	4.52	4.70	4.72	4.53	4.36	4.62	4.43
R	1-22	4-22	4-22	4-22	0-21	3-23	4-21	0-21	0-22	0-23
N	66	76	37	63	55	78	57	64	215	281

Table 41

Functional Literacy

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	11.52	11.77	14.20	13.67	15.73	15.51
Mdn	11.83	12.5	14.81	13.36	16.25	15.85
S.D.	4.47	4.38	3.90	3.57	3.75	4.20
R	0-21	0-21	6-22	4-22	6-21	4-23
N	92	74	59	67	51	135

Totals	Low SES	Med SES	High SES
$\bar{X}$	11.63	13.92	15.57
Mdn	11.88	14.21	16.00
S.D.	4.09	3.74	11.88
R	0-21	4-22	4-23
N	166	126	186

TABLE 42

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

FUNCTIONAL LITERACY

	HEP	NON-HEP
Raw Score Mean	13.13	13.98
Adjusted Mean	14.05	13.56
N=	202	276

TABLE 43

ANALYSIS OF ITEM PERFORMANCE:

FUNCTIONAL LITERACY

SES CATEGORY

ITEM NO.	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.40	.39	.42	.43	.49	.53	.44	.47
2	.85	.86	.93	.99	.94	.94	.90	.93
3	.54	.55	.76	.73	.69	.81	.66	.71
4	.26	.30	.46	.43	.31	.49	.33	.43
5	.65	.77	.68	.81	.84	.87	.71	.83
6	.32	.28	.44	.46	.57	.47	.42	.42
7	.54	.46	.54	.61	.75	.70	.59	.62
8	.45	.35	.49	.40	.51	.67	.48	.52
9	-.42	-.35	.14	.01	.32	.29	-.07	.04
10	.64	.66	.75	.72	.80	.84	.71	.76
11	.62	.62	.83	.72	.84	.80	.74	.73
12	.43	.46	.46	.45	.49	.64	.45	.54
13	.24	.12	.12	.21	.18	.13	.19	.14
14	.24	.24	.31	.27	.39	.35	.30	.30
15	-.42	-.12	.12	.09	.18	.18	-.11	.08
16	.51	.49	.61	.63	.73	.60	.59	.58
17	.42	.43	.61	.42	.75	.56	.56	.49
18	.32	.36	.53	.37	.63	.55	.46	.46
19	.32	.36	.53	.37	.63	.55	.52	.46

Table 44

Item Analysis

Speaking and Listening:

Maps Subtest

Item Number	Difficulty or Mean	Correlation with Total
1	.69	.45
2	.67	.48

Maximum Total Score: 4

S.D.: .78

Mean: 1.36

Alpha (Variable): .44

Table 45

Mean Scores and N's :

Maps Subtest

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	1.36	22	1.32	38
Mid	1.46	26	1.27	22
Low	1.37	27	1.30	20
Total	1.4	75	1.30	80

TABLE 46

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

MAPS SUBTEST

	HEP	NON-HEP
Raw Score Mean	1.40	1.30
Adjusted Mean	1.41	1.29
N=	75	80

TABLE 47

ANALYSIS OF ITEM PERFORMANCE:

SPEAKING & LISTENING: MAPS SUBTEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HFP	NHEP	HEP	NHEP	HEP	NHEP
1	.74	.75	.73	.55	.73	.66	.73	.65
2	.63	.55	.73	.73	.64	.66	.67	.65
N=	27	20	26	22	22	38	75	80

Table 48

Item Analysis

Speaking and Listening:

Questions and Negatives Subtest

Item Number	Difficulty or Mean	Correlation with Total
1	.96	.42
2	.86	.63
3	.97	.30
4	.91	.62
5	.88	.28
6	.76	.68
7	.74	.38
8	.63	.55
9	.75	.69
10	.68	.69
11	.70	.40
12	.62	.56
13	.74	.58
14	.61	.72

Maximum Total Score: 14

S.D.: 3.43

Mean: 10.81

Alpha (Multiple choice): .87

Table 49

Mean Scores and N's:

Questions and Negatives Subtest

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	12.23	22	11.87	38
Mid	11.42	25	10.55	22
Low	8.52	27	9.95	20
Total	10.61	75	11.03	80

TABLE 50

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

QUESTIONS AND NEGATIVES SUBTEST

	HEP	NON-HEP
Raw Score Mean	10.61	11.03
Adjusted Mean	11.49	11.48
N=	75	80

TABLE 51

ANALYSIS OF ITEM PERFORMANCE:

SPEAKING AND LISTENING: QUESTIONS & NEGATIVES SUBTEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.93	.95	.96	.91	1.00	.97	.96	.95
2	.70	.85	.88	.91	.95	.95	.84	.91
3	.96	.95	1.00	.95	.95	.97	.97	.96
4	.89	.90	.88	.82	.91	.97	.89	.91
5	.89	.90	.96	.77	.91	.84	.92	.84
6	.59	.65	.81	.77	.86	.87	.75	.79
7	.48	.65	.85	.77	.86	.76	.72	.74
8	.30	.60	.69	.73	.77	.63	.57	.65
9	.48	.70	.77	.82	.82	.92	.68	.84
10	.33	.55	.73	.77	.91	.79	.64	.73
11	.63	.45	.85	.59	.77	.82	.75	.66
12	.41	.50	.69	.55	.77	.74	.61	.63
13	.56	.75	.69	.64	.91	.89	.71	.79
14	.37	.55	.65	.55	.82	.74	.60	.64
N=	27	20	26	22	22	38	75	80

Table 52

Item Analysis

Speaking and Listening:

Phrases Subtest

Item Number	Difficulty or Mean	Correlation with Total
1	.94	.24
2	.73	.50
3	.73	.33
4	.47	.46

Maximum Total Score: 4

S.D.: 1.08

Mean: 2.87

Alpha (Multiple Choice): .54

Table 53

Mean Scores and N's:

Phrases Test

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	3.14	22	3.24	38
Mid	2.77	26	2.68	22
Low	2.67	27	2.45	20
Total	2.84	75	2.89	80

TABLE 54

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

PHRASES SUBTEST

	HEP	NON-HEP
Raw Score Mean	2.84	2.89
Adjusted Mean	2.89	2.84
N=	75	80

TABLE 55

ANALYSIS OF ITEM PERFORMANCE

SPEAKING AND LISTENING: PHRASES SUBTEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.89	.85	.96	.91	1.00	.97	.95	.93
2	.63	.65	.65	.77	.82	.82	.69	.76
3	.70	.60	.69	.59	.82	.84	.73	.71
4	.44	.35	.46	.41	.50	.61	.47	.49
N=	27	20	26	22	22	38	75	80

Table 56

Item Analysis

Speaking and Listening:

Multiple Meanings Subtest

Item Number	Difficulty or Mean	Correlation with Total
1	.76	.26
2	.99	.18
3	.97	.19
4	.97	.18
5	.92	.12
6	.89	.44
7	.69	.17
8	.86	.44
9	.80	.42
10	.91	.37
11	.82	.30
12	.66	.54
13	.94	.28
14	.98	.09
15	.89	.19

Maximum Total Score: 15

S.D.: 2.00

Mean: 13.04

Alpha (Multiple Choice): .66

108.

Table 57

Mean Scores and N's:

Multiple Meanings

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	13.36	22	13.08	38
Mid	13.77	26	13.05	22
Low	12.56	27	12.10	20
Total	13.21	75	12.82	80

TABLE 58

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

MULTIPLE MEANINGS

	HEP	NON-HEP
Raw Score Mean	13.21	12.83
Adjusted Mean	13.26	12.78
N=	75	80

TABLE 59

ANALYSIS OF ITEM PERFORMANCE

SPEAKING AND LISTENING: MULTIPLE MEANINGS SUBTEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.74	.80	.81	.64	.86	.71	.80	.71
2	.96	1.00	1.00	1.00	1.00	1.00	.99	1.00
3	.96	1.00	1.00	1.00	.96	.92	.97	.96
4	1.00	.90	1.00	1.00	.96	.97	.99	.96
5	1.00	.90	1.00	.86	.77	.92	.93	.90
6	.89	.85	.92	.82	.91	.95	.91	.89
7	.59	.60	.81	.68	.73	.66	.71	.65
8	.78	.75	.92	.91	.91	.87	.87	.85
9	.78	.60	.92	.91	.82	.74	.84	.75
10	.77	.87	.85	.80	.96	.86	.92	.89
11	.78	.85	.81	.82	.77	.87	.79	.85
12	.41	.45	.77	.68	.82	.74	.65	.65
13	.89	.80	.96	1.00	1.00	.95	.95	.92
14	1.00	1.00	.96	.95	1.00	.97	.99	.98
15	.93	.80	.92	.91	.91	.87	.92	.86
N=	27	20	26	22	22	38	75	80

Table 60

Item Analysis

Speaking and Listening:

Directions Subtest

Item Number	Difficulty or Mean	Correlation with Total
1	.37	.39
2	.43	.34
3	.29	.41
4	.83	.34
5	.80	.40
6	.84	.36
7	.87	.30

Maximum Total Score: 7

S.D.: 1.65

Mean: 4.43

Alpha (Variable): .64

Table 61

Mean Scores and N's:

Directions

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	5.27	22	4.71	38
Mid	5.11	26	3.81	22
Low	3.56	27	3.90	20
Total	4.60	75	4.26	80

TABLE 62

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

DIRECTIONS SUBTEST

	HEP	NON-HEP
Raw Score Mean	4.60	4.26
Adjusted Mean	4.68	4.18
N=	75	80

TABLE 63

ANALYSIS OF ITEM PERFORMANCE

SPEAKING AND LISTENING: DIRECTIONS SUBTEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.19	.30	.42	.18	.59	.45	.39	.34
2	.30	.30	.62	.45	.50	.42	.47	.40
3	.19	.30	.23	.06	.55	.39	.31	.28
4	.63	.85	.92	.73	.82	.97	.79	.88
5	.78	.55	.96	.73	.95	.79	.89	.71
6	.70	.75	.96	.86	.91	.84	.85	.82
7	.78	.85	1.00	.82	.95	.84	.91	.84
N=	27	20	26	22	22	38	75	80

Table 64

Item Analysis

Speaking and Listening:

Communications Subtest

Item Number	Difficulty or Mean	Correlation with Total
1	.97	-.01
2	.99	-.04
3	1.00	0.0
4	.97	0.24
5	.97	-.11

Maximum Total Score: 5

S.D.: .33

Mean: 4.91

Alpha (Multiple Choice): .21

Table 65

Mean Scores and N's:

Communications

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	4.95	22	4.92	38
Mid	5.00	26	4.91	22
Low	4.85	27	4.80	20
Total	4.93	75	4.89	80

TABLE 66

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

COMMUNICATION SUBTEST

	HEP	NON-HEP
Raw Score Mean	4.93	4.89
Adjusted Mean	4.94	4.88
N=	75	80

TABLE 37

ANALYSIS OF ITEM PERFORMANCE

SPEAKING AND LISTENING: COMMUNICATIONS SUBTEST

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.93	1.00	1.00	1.00	1.00	.95	.97	.97
2	1.00	.90	1.00	1.00	1.00	1.00	1.00	.97
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	.93	.95	1.00	.91	1.00	1.00	.97	.96
5	1.00	.95	1.00	1.00	.95	.97	.99	.97
N=	27	20	26	22	22	38	75	80

Table 68

Item Analysis

Total Speaking and Listening

Sub-test	Difficulty or Mean	Correlation with Total
1. Maps	1.36	.59
2. Questions and Negatives	10.81	.91
3. Phrases	2.87	.63
4. Multiple Meanings	13.04	.76
5. Directions	4.43	.72
6. Communications	4.91	.11

Maximum Total Score: 49 S.D.: 7.16

Mean: 37.42 Alpha (Multiple Choice): .70

Table 69

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

SPEAKING & LISTENING

	HEP	NON-HEP
Adjusted Mean	38.67	37.46
N =	75	80

Table 70

Item Analysis

Spelling

Item Number	Difficulty or Mean	Correlation with Total
1	3.11	.92

Maximum Total Score: 6

S.D. 1.65

Mean: 3.11

Table 71

Mean Scores and N's:

Spelling

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	3.86	22	3.11	38
Mid	2.65	26	3.00	22
Low	3.15	27	2.95	20
Total	3.19	75	3.04	80

TABLE 72

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:
SPELLING

	HEP	NON-HEP
Raw Score Mean	3.19	3.04
Estimated Adjusted Mean	3.44	3.02
N=	75	80

Table 73

Item Analysis

Sentence and Paragraph Reading

Item Number	Difficulty or Mean	Correlation with Total
1	.84	.57
2	.68	.43
3	.75	.64
4	.89	.55
5	.84	.65
6	.75	.63
7	.83	.65
8	.53	.39
9	.70	.64
10	.51	.56
11	.79	.60
12	.73	.68
13	.71	.77
14	.68	.68
15	.48	.58
16	.49	.58
17	.68	.70
18	.61	.62
19	.26	.42
20	.27	.41

Maximum Total Score: 20 S.D.: 5.72

Mean: 13.03 Alpha (Multiple Choice): .93

Table 74

Mean Scores and N's:

Sentence & Paragraph Reading

SES	HEP		Non-HEP	
	$\bar{X}$	N	$\bar{X}$	N
High	15.18	22	15.26	38
Mid	13.31	26	12.23	22
Low	10.52	27	11.30	20
Total	12.85	75	13.44	80

TABLE 75

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

SENTENCE & PARAGRAPH READING

	HEP	NON-HEP
Raw Score Mean	12.85	13.44
Adjusted Mean	13.17	13.14
N=	75	80

TABLE 76

ANALYSIS OF ITEM PERFORMANCE

SENTENCE-PARAGRAPH READING

ITEM NO.	SES CATEGORY							
	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.70	.75	.81	.86	.95	.92	.81	.86
2	.63	.65	.65	.73	.68	.74	.65	.71
3	.63	.55	.85	.68	.91	.84	.79	.72
4	.89	.85	.85	.82	.95	.95	.89	.89
5	.70	.80	.81	.82	.95	.97	.81	.89
6	.59	.65	.81	.64	.95	.84	.77	.74
7	.81	.80	.81	.77	.86	.95	.83	.86
8	.52	.55	.58	.50	.41	.58	.51	.55
9	.52	.65	.69	.59	.86	.84	.68	.72
10	.26	.40	.42	.41	.86	.71	.49	.55
11	.70	.75	.77	.77	.82	.92	.76	.84
12	.59	.70	.73	.68	.82	.89	.71	.79
13	.52	.50	.81	.73	.82	.87	.71	.74
14	.56	.70	.69	.64	.77	.76	.67	.71
15	.30	.30	.50	.36	.59	.74	.45	.52
16	.22	.35	.73	.41	.59	.61	.51	.49
17	.52	.60	.77	.55	.86	.79	.71	.67
18	.52	.50	.62	.59	.68	.74	.60	.64
19	.11	.15	.23	.36	.41	.29	.24	.28
20	.22	.10	.19	.32	.41	.32	.27	.26
N=	27	20	26	22	22	38	75	80

Table 77

Item Analysis

Language Systems

Item Number	Difficulty or Mean	Correlation with Total
1	.20	.22
2	.43	.32
3	.53	.34
4	5.81	.62
5	2.25	.57
6	6.73	.30
7	1.83	.43
8	.24	.09
9	.25	.21
10	.46	.32
11	.17	.13
12	3.43	.51
13	2.70	.61

Maximum Total Score: 46

S.D.: 5.74

Mean: 25.04

Alpha (Multiple Choice): .48

Table 78

Language Systems

Analysis by district

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	23.93	26.63	25.79	26.21	23.90	24.11	22.92	27.30	24.05	26.04
Mdn	23.93	27.00	26.00	26.50	23.56	23.46	22.25	27.25	23.82	25.91
S.D.	4.58	4.77	6.93	6.58	5.49	4.64	6.15	5.05	5.88	5.44
R	10-32	14-39	12-40	13-41	12-40	11-39	8-39	18-39	8-40	11-41
N	70	62	61	70	67	71	78	71	276	274

Table 79

Language Systems

Analysis by socio-economic status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	22.58	24.20	23.98	26.29	26.72	26.82
Mdn	22.83	24.17	23.64	26.19	25.86	26.71
S.D.	5.76	5.83	5.88	4.57	5.25	5.64
R	8-37	11-36	12-40	17-37	18-41	15-41
N	96	64	92	75	75	127

Totals	Low SES	Med SES	High SES
$\bar{X}$	23.23	25.02	26.78
Mdn	23.50	24.95	26.23
S.D.	5.83	5.44	5.49
R	8-37	12-40	15-41
N	160	167	202

Table 80

SES (Covariance) - Adjusted HEP

and Non-HEP Mean Scores:

Language Systems

	HEP	NHEP
Raw Score Mean	24.25	26.04
Adjusted Mean	24.64	25.65
N =	263	266

Table 81

Item Analysis

Test: Student Attitude

Test Number	Difficulty or Mean	Correlation with Total
1	3.4	.52
2	2.9	.54
3	3.3	.30
4	3.6	.39
5	2.9	.51
6	3.2	.54
7	2.9	.36
8	3.0	.30
9	3.3	.51
10	3.1	.39
11	3.2	.43
12	2.7	.31
13	2.9	.44
14	3.1	.65
15	2.7	.33
16	2.9	.36
17	3.0	.42
18	2.9	.36
19	3.2	.56
20	3.3	.51
21	3.1	.55
22	2.3	.32
23	3.2	.60
24	2.7	.25
25	2.9	.44

Maximum
Total Score: 100 S.D.: 9.36

Mean: 75.46 Alpha (Variable): .82

Table 82

Student Attitude

Analysis by District

	Honolulu		Windward		Central		Leeward		Total	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	73.79	77.47	76.29	73.16	76.13	77.04	73.09	77.83	74.78	76.14
Mdn	74.08	76.75	75.17	72.5	76.5	77.40	72.67	78.50	74.5	76.50
S.D.	9.17	8.88	9.40	10.42	9.10	10.44	10.21	10.85	9.54	10.32
R	56-95	56-100	55-98	42-97	52-95	45-100	49-91	54-95	49-98	42-100
N	77	59	62	70	54	77	53	36	246	242

Table 83

Student Attitude

Analysis by Socio-economic Status

	Low		Medium		High	
	HEP	NHEP	HEP	NHEP	HEP	NHEP
$\bar{X}$	74.08	74.75	73.95	76.65	76.66	76.54
Mdn	73.70	73.75	73.63	75.50	78.25	77.08
S.D.	8.36	9.46	10.95	9.12	9.00	11.39
R	56-98	53-97	49-95	54-97	52-95	42-100
N	88	63	85	62	62	113

Totals	Low SES	Med SES	High SES
$\bar{X}$	74.36	75.09	76.58
Mdn	73.86	74.08	77.56
S.D.	8.84	10.30	10.60
R	42-100	49-97	42-100
N	151	147	175

TABLE 84

SES (COVARIANCE) - ADJUSTED HEP

AND NON-HEP MEAN SCORES:

STUDENT ATTITUDE

	HEP	NON-HEP
Raw Score Mean	74.78	76.14
Adjusted Mean	74.90	75.91
N =	235	238

TABLE 85

ANALYSIS OF ITEM PERFORMANCE

STUDENT ATTITUDE QUESTIONNAIRE

SES CATEGORY

ITEM NO.	LOW		MID		HIGH		TOTAL	
	HEP	NHEP	HEP	NHEP	HEP	NHEP	HEP	NHEP
1	.03	.18	-.25	.08	-.27	.16	-.16	.14
2	.04	.18	-.25	.08	-.27	.16	.06	-.06
3	-.12	.04	-.09	.01	.13	.06	-.04	.04
4	-.15	-.10	-.11	.22	.11	.08	-.07	.07
5	-.10	-.07	.03	-.01	.19	-.01	.02	-.02
6	0.00	.14	-.09	.07	-.05	-.03	-.04	.04
7	0.00	.27	-.07	.04	.14	.11	.01	-.01
8	.13	-.05	-.06	.05	-.01	.05	.02	-.02
9	-.18	.21	-.04	.02	.04	.20	-.07	.07
10	-.13	-.33	-.17	.01	.20	.31	-.06	.06
11	-.20	.17	.05	.01	-.01	.21	-.06	.06
12	.08	-.04	-.06	.25	-.06	-.10	-.01	.01
13	.09	-.04	-.20	-.09	.02	.10	-.03	.03
14	.09	.04	-.20	-.09	.02	.10	.03	-.03
15	-.34	-.10	.10	.06	.15	.13	-.05	.05
16	-.03	-.13	-.09	-.16	-.04	.27	-.05	.05
17	-.09	.04	-.07	0.00	-.13	.17	-.09	.09
18	.03	-.21	-.14	-.18	.07	.27	-.02	.02
19	-.17	-.05	-.05	.22	.07	.04	-.06	.06
20	-.01	-.13	-.29	.02	.08	.24	-.09	.09
21	-.18	-.13	-.04	.13	.22	.05	-.02	.02
22	-.21	-.05	-.12	.03	.25	.13	-.06	.06
23	-.15	.01	-.14	.19	.09	.06	-.08	.08
24	-.28	-.16	-.15	.24	.05	.27	-.15	.15
25	.11	.19	.10	.02	-.06	-.24	.06	-.06

TABLE 86

HEP CLASSROOM OBSERVATION RESULTS

LEARNING ENVIRONMENT

12. Indicate all major equipment not in working condition:

Four classrooms had minor problems with a piece of equipment; one was immediately repaired.

13. Were there any unusual circumstances that might have disrupted normal classroom routine:

In one classroom, painters worked for half the period (without disturbing the students). In another classroom, approximately 1/4 of the students went on monitor duty half-way through the HEP period.

PRELIMINARY CLASSROOM ORGANIZATION

14. Is there a planning session or circle? *Yes. 21 out of 30 classes.*

15. To how many students does the teacher assign specific tasks and materials?

Assignments were made in 13 out of 30 classes.

16. About how many minutes before more than 1/2 of the students became engaged in HEP related activities?

0 - 1	(minutes) -	*13 out of 30 classes*
2 - 5	-	*16 out of 30 classes*
6 - 10	-	*1 out of 30 classes*
11 - 15	-	*0*
16 - 20	-	*0*

TIMED OBSERVATION SCHEDULE (AT 20 MINUTE INTERVALS)
(Because of time limitations, not all classes were observed for all three periods. After 20 minutes, N = 30. After 40 minutes, N = 28. After 60 minutes, N = 24).

How many students are: *(Average number of students per class).*

17. tutoring each other

After 20 m. *3.04* 40 m. *3.21* 60 m. *2.50* *Overall average: 2.98*

TABLE 86 (cont'd)

18. engaged in disruptive behavior

after 20 m. *0.47* 40 m. *0.79* 60 m. *0.92* *Overall average: 0.71*

19. lacking in any direction

after 20 m. *0.10* 40 m. *0.07* 60 m. *0.13* *Overall average: 0.10*

20. NOT working on HEP materials

after 20 m. *0.77* 40 m. *0.82* 60 m. *1.17* *Overall average: 0.90*

21. seeking teacher(s) help

after 20 m. *3.10* 40 m. *3.18* 60 m. *3.42* *Overall average: 3.22*

22. How much student mobility is there in the classroom?

0 No students are moving around
1 Up to 1/4 of the students are moving around
2 Up to 1/2 of the students are moving around
3 Up to 3/4 of the students are moving around
4 Almost all or all of the students are moving around

after 20 m. - *5 classes: no movement*
16 classes: up to 1/4 moving
9 classes: up to 1/2 moving

40 m. - *16 classes: up to 1/4 moving*
11 classes: up to 1/2 moving
1 class : up to 3/4 moving

60 m. - *11 classes: up to 1/4 moving*
12 classes: up to 1/2 moving
1 class : up to 3/4 moving

23. Of the students that are mobile, about how many are definitely NOT participating in HEP related activities? Use the same scale as #22.

after 20 m. - *Of all observation periods (N = 82), in only 12 periods did students not participate.*

40 m. -

60 m. -

TABLE 86 (cont'd)

24. Did the teacher(s) move about to monitor student work?

0 Never
1 Very little
2 Approximately 1/2 of the time
3 All of the time

after 20 m. - *Never - 12; Very little - 10; About 1/2 time - 6; All the time - 2.*

40 m. - *Never - 4; Very little - 9; About 1/2 time - 10; All the time - 5.*

60 m. - *Never - 7; Very little - 8; About 1/2 time - 6; All the time - 3.*

GENERAL CLASSROOM OBSERVATIONS

Use the following scale to indicate how much time the teacher(s) spent on:

0 Never
1 Very little
2 Approximately 1/2 of the time
3 All of the time

		(Number of classes)	*N/A**
25.	individual or small group student interaction?	*3 - Never* *10 - 1/2 time* *17 - All the time*	
26.	record keeping activities?	*6 - Never* *10 - Very little* *11 - 1/2 time* *3 - All the time*	
27.	group lectures?	*28 - Never* *2 - 1/2 time*	
28.	phonics?	*30 - Never*	
29.	manuscript?	*29 - Never* *1 - Very little*	
30.	Did students return all equipment to their storage areas?	*2 - Never* *2 - 1/2 time* *24 - All the time*	2

* Some observations were scored as N/A (not applicable) because the classes observed were not conducted strictly according to HEP guidelines.

TABLE 86 (cont'd)

		(Number of classes)	N/A
31.	Keep track of their own progress?	2 - Never 4 - Very little 10 - 1/2 time 13 - All the time	1

Did the students:

32.	operate the various equipment properly?	27 - All the time	3
33.	obtain help when they needed it?	1 - 1/2 time 28 - All the time	1

Use the following scale to answer questions 34, 35, and 36.

0 Not at all
1 Very little
2 To a moderate degree
3 Very highly

34.	Was the physical environment supportive of the learning situation?	11 - Moderately 19 - Very highly	
35.	Using the same scale, how well do you think the teacher employed HEP protocols and his or her own resources in implementing the objectives of the HEP program?	1 - Very little 17 - Moderately 11 - Very highly	1
36.	To what extent did the teacher allow student mobility?	1 - Very little 2 - Moderately 26 - Very highly	1

37. Did the teacher hold an evaluation session?

Yes 15 out of 30 classes

38. Did the students work on activities of various levels of complexity or difficulty?

Yes 27 out of 30 classes

TABLE 87

RESPONSES OF 17 HEP TEACHERS
TO THE
HAWAI'I ENGLISH PROGRAM TEACHER QUESTIONNAIRE

Average = 93.1
Median = 90.0
Range = 60-120

	YES (f)	NO (f)
1. Do you feel that it is essential for teachers to have received special training before initiating HEP in their classrooms?	1 (16)	2 (1)
2. If you were assigned to a new school that was going to use HEP in some classes, and you were given a choice, would you choose to teach HEP?	1 (13)	2 (3)

Please rate the following aspects of the program according to your opinion of them. (Circle one category for each item).

	Very Favor -able	Favor -able	Neutral	Unfavor -able	Very Unfavor -able	Average
	(f)	(f)	(f)	(f)	(f)	
3. Variety of materials	5 (9)	4 (7)	3 (1)	2 (0)	1 (0)	(4.47)
4. Individualization of student programs	5 (5)	4 (8)	3 (3)	2 (1)	1 (0)	(4.00)
5. Student involvement in decision making	5 (4)	4 (8)	3 (3)	2 (2)	1 (0)	(3.82)
6. Student interest in learning	5 (2)	4 (9)	3 (5)	2 (1)	1 (0)	(3.71)
7. Self-directed learning	5 (4)	4 (7)	3 (3)	2 (3)	1 (0)	(3.71)
8. Use of programmed materials	5 (4)	4 (7)	3 (3)	2 (3)	1 (0)	(3.71)
9. Teacher role in guidance	5 (2)	4 (7)	3 (6)	2 (1)	1 (1)	(3.47)
10. Inservice training for teachers	5 (2)	4 (8)	3 (5)	2 (2)	1 (0)	(3.59)
11. Record keeping	5 (0)	4 (5)	3 (6)	2 (5)	1 (1)	(2.88)
12. Room arrangement	5 (0)	4 (6)	3 (10)	2 (1)	1 (0)	(3.29)
13. Diagnostic process	5 (0)	4 (8)	3 (3)	2 (5)	1 (0)	(3.19)
14. Daily time allowance	5 (1)	4 (7)	3 (6)	2 (1)	1 (1)	(3.38)

TABLE 87 (cont'd)
Page 2

How successful do you feel the program is with the following types of students? (If you had them in your class.) (Circle one category for each item.)

	Very Successful		Fairly Successful		No Help		Harmful		Uncertain	None In	Average
		(f)		(f)		(f)		(f)	(f)	(f)	
15. Academically gifted	6	(3)	5	(8)	4	(0)	3	(0)	(0)	(6)	(5.27)
16. Average	6	(3)	5	(11)	4	(2)	3	(0)	(1)	( )	(5.06)
17. Low socio-economic status	6	(1)	5	(11)	4	(0)	3	(2)	(3)	(0)	(4.79)
18. Non-English speakers	6	(0)	5	(2)	4	(1)	3	(0)	(6)	(0)	(4.67)
19. Emotionally disturbed	6	(0)	5	(2)	4	(2)	3	(2)	(5)	(6)	(4.00)
20. Academically retarded	6	(0)	5	(2)	4	(1)	3	(4)	(4)	(6)	(3.71)

Please indicate how you feel about the following statements by circling the appropriate number.

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Average
		(f)		(f)		(f)		(f)		(f)	
21. Having different grade level students in the same room limits the progress that can be made by students in the higher grade.	5	(0)	4	(2)	3	(7)	2	(4)	1	(4)	(2.41)
22. Children in HEP, as compared with children the same age in other language programs, have been able to get to know better other children in the classroom.	5	(3)	4	(6)	3	(3)	2	(4)	1	(1)	(3.35)
23. Most of the children remember which programs they are working on in HEP.	5	(1)	4	(12)	3	(2)	2	(1)	1	(1)	(3.65)

TABLE 87 (cont'd)
Page 3

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Average
		(f)		(f)		(f)		(f)		(f)	
24. Children in HEP learn to recognize the elements of literature (e.g, plot, character, setting) to a greater degree than in other language arts programs.	5	(0)	4	(2)	3	(9)	2	(5)	1	(0)	(2.81)
25. A child generally benefits from tutoring another child.	5	(2)	4	(11)	3	(2)	2	(2)	1	(0)	(3.76)
26. A 3-on-2 grouping is more suited to HEP than is a self-contained classroom.	5	(1)	4	(2)	3	(9)	2	(2)	1	(1)	(3.00)
27. Being asked to follow the directions for use of the HEP curriculum seriously limits the freedom of the teachers.	5	(2)	4	(5)	3	(2)	2	(5)	1	(1)	(3.13)
28. The danger of mislearning is too great a risk when children teach each other.	5	(0)	4	(3)	3	(4)	2	(9)	1	(1)	(2.53)
29. Teaching the HEP curriculum requires less professional competence on the part of the teacher than teaching in a traditional program.	5	(0)	4	(2)	3	(2)	2	(7)	1	(6)	(2.00)
30. A child's performance should be checked by another child rather than always by the teacher.	5	(1)	4	(6)	3	(3)	2	(5)	1	(2)	(2.94)
31. There is greater personal and professional satisfaction in teaching HEP than other language arts programs.	5	(3)	4	(3)	3	(4)	2	(6)	1	(1)	(3.06)
32. There is greater opportunity to know the children better as individuals in HEP than in other language arts programs.	5	(3)	4	(7)	3	(2)	2	(4)	1	(1)	(3.41)

TABLE 87 (cont'd)
Page 4

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Average
		(f)		(f)		(f)		(f)		(f)	
33. Children gain from the opportunity to plan their daily tasks.	5	(4)	4	(5)	3	(7)	2	(1)	1	(0)	(3.71)
34. Students who are given opportunities to make responsible choices are likely to progress more rapidly in language skills development over a period of years.	5	(2)	4	(2)	3	(9)	2	(4)	1	(0)	(3.12)
35. Children in HEP, as compared with children the same age in other language programs, have developed a more positive self-concept.	5	(3)	4	(2)	3	(8)	2	(4)	1	(0)	(3.24)
36. I feel more positive towards HEP after having taught it than when I first heard about it.	5	(4)	4	(9)	3	(3)	2	(0)	1	(1)	(3.88)
Children in my HEP class, as compared with children the same age not in the program, are more competent in:											
37. Operating classroom equipment	5	(3)	4	(7)	3	(6)	2	(1)	1	(0)	(3.71)
38. Selecting their own activities to work on.	5	(5)	4	(4)	3	(6)	2	(2)	1	(0)	(3.71)
39. Following through on activities they have selected.	5	(4)	4	(2)	3	(8)	2	(3)	1	(0)	(3.41)
40. Seeking help from the teacher or other children when they need it.	5	(3)	4	(7)	3	(4)	2	(3)	1	(0)	(3.59)
41. Helping other children to learn.	5	(5)	4	(8)	3	(3)	2	(1)	1	(0)	(4.00)
42. Recording their own progress.	5	(2)	4	(8)	3	(6)	2	(1)	1	(0)	(3.65)

TABLE 87 (cont'd)
Page 5

	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Average
		(f)		(f)		(f)		(f)		(f)	
43. Evaluating their own work during the language arts period.	5	(1)	4	(5)	3	(7)	2	(4)	1	(0)	(3.18)
44. Communicating orally with their peers.	5	(2)	4	(5)	3	(6)	2	(4)	1	(0)	(3.29)
45. Writing cursively.	5	(1)	4	(2)	3	(7)	2	(5)	1	(2)	(2.71)
46. Undertaking new tasks.	5	(1)	4	(6)	3	(7)	2	(3)	1	(0)	(3.29)
47. Reading more.	5	(3)	4	(7)	3	(6)	2	(1)	1	(0)	(3.71)
48. Reading a wider variety of books.	5	(3)	4	(8)	3	(6)	2	(0)	1	(0)	(3.82)
49. Transposing ideas from one mode of expression to another.	5	(1)	4	(3)	3	(10)	2	(3)	1	(0)	(3.12)

Please answer the following questions.* (f)

50. Which of the following is not one of the major goals for the languages systems program?

a) To provide students with insight into the linguistic and psychological properties of language. (1)

b) To affect language arts skills. (0)

c) To give the students factual information about language in general and English in particular. (2)

d) To give the students skills in non-standard English. (12)

* Items 50-52 can be viewed as test questions with "correct" answers.

		(f)
51.	What are three skills taught to children in HEP which are not usually taught in other elementary school language arts programs?	
	a) Typing	(10)
	b) Dialect and style variations	(4)
	c) Task oriented group discussion	(4)
	d) Speed reading	(6)
	e) Peer-Teaching skills	(1)
	f) Multipurposeful reading skills	(1)
	g) Coordinated language skills	(1)
	h) Decision-making	(1)
	i) Planning	(1)
	j) Forms and contracts.	(1)
	k) Systems	(1)
	l) Literature	(1)
	m) Programmed materials of a wider variety	(1)
	n) Use of equipment	(1)
	o) Listening-speaking skills	(1)
	p) Immediate check of students' work	(1)
	No response	(3)
52.	The HEP Literature program seeks to give students an appreciation of literature through:	
	a) Reading significant works	(3)
	b) Enjoyment of literature	(12)
	c) Analysis of major themes and genres	(3)
	d) Writing book reports	(0)
	No response	(5)

(Total more than 17; some gave multiple answers.)

Table 88

Major categories of responses to HEP and non-HEP teacher interview Item 1

(HEP: "What is your opinion of teacher training for HEP?"
Non-HEP: "What is your opinion of inservice teacher training and Language Arts training?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. Training is generally adequate	3	23.08	6	40.00
2. Training is inadequate in some respects	2	15.38	4	26.67
3. Training is too condensed	6	46.15	2	13.34
4. Other	1	7.69	0	0.00
5. No response	1	7.69	3	20.00
Total	13	100.00	15	100.00

Table 89

Major categories of responses to HEP and non-HEP teacher interview Item 2

(HEP: "In what ways have you altered the original program to suit your students?"
Non-HEP: "In what ways have you altered the Language Arts program to suit your students?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. Have supplemented the program in some way	10	66.67	9	50.00
2. Teach students according to level of ability	3	20.00	8	44.44
3. No response	2	13.34	1	5.56
Total	15	100.00	18	100.00

Table 90

Major categories of responses to HEP teacher interview

Item 3 (a)

("What materials and equipment are the most useful to you?")

	Category	Freq.	%
1.	Instructional library	5	22.73
2.	Tape recorder	4	18.18
3.	Typewriter	3	13.64
4.	Science Research Associates reading kits	4	18.18
5.	Other	5	22.73
6.	No preference	1	4.55
	Total	22	100.00

Table 91

Major categories of responses to non-HEP teacher interview Item 3 (a)

("What materials and equipment are the most useful to you?")

Category	Freq.	%
1. Visual/audio aids	7	21.21
2. Library books	4	12.12
3. Other	20	60.61
4. No preference	1	3.03
5. No response	1	3.03
Total	33	100.00

Table 92

Major cateogires of responses to HEP teacher interview

Item 3 (b)

("What materials and equipment are the least useful to you?")

Category	Freq.	%
1. Typewriters	4	22.22
2. Purposeful writing	2	11.11
3. Other	9	50.00
4. No preference	2	11.11
5. No response	1	5.56
Total	18	100.00

Table 93

Major categories of responses to non-HEP teacher interview

Item 3 (b)

("What materials and equipment are the least useful to you?")

Category	Freq.	%
1. No response	10	58.82
2. All are useful	3	17.65
3. Other	4	23.53
Total	17	100.00

Table 94

Major categories of responses to HEP and non-HEP teacher interview Item 4

(HEP: "What effects have you seen of HEP on students?"
Non-HEP: "What effects have you seen of Language Arts on students?")

		HEP		NHEP	
	Category	Freq.	%	Freq.	%
1.	Academic skills improved	4	20.00	7	38.89
2.	Social interaction skills with peers improved	4	20.00	3	16.67
3.	Self-direction of students improved	6	30.00	0	0.00
4.	Students with differing abilities affected in different ways	3	15.00	3	16.67
5.	Difficult to know	2	10.00	0	0.00
6.	Other	1	5.00	5	27.78
	Total	20	100.00	18	100.00

Table 95

Major categories of responses to HEP and non-HEP teacher interview Item 5 (a)

(HEP: "What do you see as the major strengths of HEP?"
Non-HEP: "What do you see as the major strengths of the Language Arts program?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. Certain academic components are helpful	2	11.76	8	47.06
2. Certain materials are helpful	3	17.65	3	17.65
3. Students are self-paced	5	29.41	0	0.00
4. Other	7	41.18	6	35.29
Total	17	100.00	17	100.00

Table 96

Major categories of responses to HEP and non-HEP teacher interview Item 5 (b)

(HEP: "What do you see as the major weakness of HEP?"
Non-HEP: "What do you see as the major weakness of the Language Arts program?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. Doesn't meet needs of students with differing abilities	9	45.00	9	42.86
2. Certain academic areas are weak	4	20.00	6	28.57
3. Program is too unstructured	3	15.00	0	0.00
4. Other	3	15.00	0	0.00
5. No response	1	5.00	6	28.57
Total	20	100.00	21	100.00

Table 97

Major categories of responses to HEP and non-HEP teacher interview Item 6

(HEP: "What changes, if any, would you like to see in HEP?
Non-HEP: "What changes, if any, would you like to see in the Language Arts program?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. Meet the needs of students of differing abilities	4	21.05	5	29.41
2. Supplement the basic program	6	31.58	5	29.41
3. Provide more materials	3	15.79	0	0.00
4. Drop the entire program	2	10.53	0	0.00
5. Other	4	21.05	5	29.41
6. No response	0	0.00	2	11.76
Total	19	100.00	17	100.00

Table 98

Major categories of responses to HEP and non-HEP teacher interview Item 7

("How would you compare HEP vs. the regular English curriculum?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. HEP generally preferable	9	64.29	0	0.00
2. Non-HEP generally preferable	2	14.29	7	43.75
3. HEP not appropriate for some students	2	14.29	6	37.50
4. Other	2	14.29	3	18.75
Total	14	100.00	16	100.00

Table 99

Major categories of responses to HEP and non-HEP teacher interview Item 8

(HEP: "How have your reactions to HEP changed as you acquire more experience with the program?"
Non-HEP: "How have your reactions to Language Arts changed as you acquire more experience with the program?")

Category	HEP Freq.	HEP %	NHEP Freq.	NHEP %
1. Likes it the same or more	8	57.14	5	33.33
2. Likes it less	2	14.28	2	13.33
3. Has better awareness of individual needs	1	7.14	4	26.67
4. Other	2	14.28	3	20.00
5. No response	0	0.00	1	6.67
Total	14	100.00	15	100.00

Table 100

Major categories of responses to HEP student interview item 2.

("What do you think about students tutoring each other?")

	SES							
	Low		Medium		High		Total	
Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Generally likes tutoring	10	66.67	1	7.14	4	33.33	15	36.59
2. Generally dislikes tutoring	0	0.00	0	0.00	0	0.00	0	0.00
3. Helps each other learn	5	33.36	13	92.86	8	66.66	26	63.41
Total	15	100.00	14	100.00	12	100.00	41	100.00

Table 101

Major categories of responses to HEP student interview item 3 (a) ("What do you like about working with HEP materials?")

		SES									
		Low		Medium		High		Unknown		Total	
	Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1.	Fun	3	21.43	6	42.86	3	27.27	1	2.38	13	30.99
2.	Helps learn	2	14.29	3	21.43	0	0.00	1	2.38	6	14.28
3.	Good/likes them	4	28.57	2	14.29	2	18.18	1	2.38	9	21.42
4.	Other	5	35.71	3	21.43	6	54.55	0	0.00	14	33.32
	Total	14	100.00	14	100.00	11	100.00	3	7.14	42	100.00

Table 102

Major categories of responses to HEP student interview item 3 (b)

("Which HEP materials do you like best?")

	SES									
	Low		Medium		High		Unknown		Total	
Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Instructional library	5	25.00	2	6.45	3	15.00	0	0.00	10	12.34
2. Reading	4	16.00	4	12.90	3	15.00	0	0.00	11	13.58
3. Typing	2	8.00	2	6.45	1	5.00	1	20.00	6	7.41
4. Meaningful communication	2	8.00	2	6.45	3	15.00	1	20.00	8	9.85
5. Speeded reading	2	8.00	3	9.68	2	10.00	0	0.00	7	8.64
6. Task-oriented group discussion	1	4.00	3	9.68	1	5.00	0	0.00	5	6.17
7. Other	9	36.00	15	48.39	7	35.00	3	60.00	34	41.97
Total	25	100.00	31	100.00	20	100.00	5	100.00	81	100.00

Table 103

Major categories of responses to HEP student interview item 3 (c) ("Which HEP materials do you like least?")

Category	SES: Low Freq.	Low %	Medium Freq.	Medium %	High Freq.	High %	Unknown Freq.	Unknown %	Total Freq.	Total %
1. Science Research Associates reading kits	3	13.04	2	10.00	0	0.00	0	0.00	5	8.34
2. Coordinated language skills kit	2	8.70	2	10.00	4	30.77	0	0.00	8	13.35
3. Typing	2	8.70	3	15.00	0	0.00	0	0.00	5	8.34
4. Other	16	69.57	11	55.00	7	53.85	2	50.00	36	60.02
5. No opinion	0	0.00	2	10.00	2	15.38	2	50.00	6	10.02
Total	23	100.00	20	100.00	13	100.00	4	100.00	60	100.00

Table 104

Major categories of responses to HEP student interview item 4 ("What do you think about keeping your own records in HEP?")

Category	SES: Low Freq.	Low %	Medium Freq.	Medium %	High Freq.	High %	Unknown Freq.	Unknown %	Total Freq.	Total %
1. Generally likes it	7	43.75	4	25.00	3	30.00	0	0.00	14	30.44
2. Helps know progress	5	31.25	7	43.75	7	70.00	1	25.00	20	43.48
3. Proves work is done	1	6.25	2	12.50	0	0.00	0	0.00	3	6.52
4. Generally dislikes	0	0.00	1	6.25	0	0.00	1	25.00	2	4.34
5. No opinion	3	18.75	2	10.50	0	0.00	2	50.00	7	15.22
Total	16	100.00	16	100.00	10	100.00	4	100.00	46	100.00

Table 105

Major categories of responses to HEP student interview item 5 ("What things do you like learning in HEP?")

Category	SES: Low Freq.	Low %	Medium Freq.	Medium %	High Freq.	High %	Unknown Freq.	Unknown %	Total Freq.	Total %
1. Speeded reading	2	5.88	1	3.03	2	9.09	0	0.00	5	5.38
2. Task-oriented group discussion	1	2.94	3	9.09	2	9.09	0	0.00	6	6.46
3. Typing	3	8.82	1	3.03	2	9.09	0	0.00	6	6.46
4. Reading	6	27.27	7	21.21	3	13.64	1	25.00	17	18.29
5. Writing	2	5.88	4	12.12	4	18.18	1	25.00	11	11.83
6. Other	16	47.06	17	51.52	9	40.90	2	50.00	44	47.26
7. No response	4	11.76	0	0.00	0	0.00	0	0.00	4	4.30
Total	34	100.00	33	100.00	22	100.00	4	100.00	93	100.00

Table 106

Major categories of responses to HEP student interview item 6 (a) ("What things do you like best about HEP?")

Category	SES: Low Freq.	Low %	Medium Freq.	Medium %	High Freq.	High %	Unknown Freq.	Unknown %	Total Freq.	Total %
1. Instructional library	2	8.33	1	4.55	0	0.00	1	20.00	4	5.97
2. Reading	2	8.33	5	22.72	2	12.50	1	20.00	10	14.93
3. Typing	2	8.33	2	9.09	1	6.25	1	20.00	6	8.96
4. Working with friend	1	4.17	2	9.09	3	18.75	0	0.00	6	8.96
5. Other	13	54.17	10	45.45	10	62.50	2	40.00	35	52.25
6. No response	4	16.67	2	9.09	0	0.00	0	0.00	6	8.96
Total	24	100.00	22	100.00	16	100.00	5	100.00	67	100.00

Table 107

Major categories of responses to HEP student interview item 6 (b) ("What things do you like least about HEP?")

	SES									
	Low		Medium		High		Unknown		Total	
Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Typing	1	5.00	2	10.00	0	0.00	0	0.00	3	5.46
2. Writing	1	5.00	1	5.00	1	9.09	0	0.00	3	5.46
3. No dislikes	5	25.00	3	15.00	5	45.45	0	0.00	13	23.63
4. Other	9	45.00	12	60.00	5	45.45	4	100.00	30	54.54
5. No response	4	20.00	2	10.00	0	0.00	0	0.00	6	10.91
Total	20	100.00	20	100.00	11	100.00	4	100.00	55	100.00

Table 108

Major categories of responses to HEP student interview item 7 ("What would you like to change about HEP?")

	SES									
	Low		Medium		High		Unknown		Total	
Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Nothing	10	55.56	6	35.29	6	54.55	3	75.00	25	50.00
2. Change reading selection (make easier or better)	0	0.00	5	29.41	1	9.09	1	25.00	7	14.00
3. Other	8	44.44	6	35.29	4	36.36	0	0.00	18	36.00
Total	18	100.00	17	100.00	11	100.00	4	100.00	50	100.00

Table 109

Major categories of responses to non-HEP student interview item 1 (a) ("What things do you like about your English classes?")

		SES							
		Low		Medium		High		Total	
	Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1.	Reading	9	56.25	8	57.14	12	50.00	29	53.68
2.	Spelling	2	12.50	1	7.14	7	29.17	10	18.56
3.	Workbooks/sheets	2	12.50	2	14.29	4	16.67	8	14.80
4.	Writing	3	18.75	3	21.43	1	4.17	7	12.98
	Total	16	100.00	14	100.00	24	100.00	54	100.00

Table 110

Major categories of responses to non-HEP student interview item 1 (b) ("What things do you dislike about your English classes?")

	SES							
	Low		Medium		High		Total	
Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Too much work or work is too hard	2	13.33	2	2.22	4	12.90	8	14.55
2. Boring	0	0.00	2	2.22	6	19.35	8	14.55
3. Dislikes a specific academic component	7	46.67	5	55.55	12	38.71	24	43.64
4. None	6	40.00	0	0.00	9	29.03	15	27.27
Total	15	100.00	9	100.00	31	100.00	55	100.00

Table 111

Major categories of responses to non-HEP student interview item 3. ("What do you think about students tutoring each other?")

	SES							
	Low		Medium		High		Total	
Category	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1. Generally likes tutoring	7	43.75	6	42.86	14	40.00	27	41.54
2. Generally dislikes tutoring	2	12.50	0	0.00	3	8.57	5	7.70
3. Helps each other learn	3	18.75	5	35.71	13	37.14	21	32.31
4. Never tutored	4	25.00	3	21.43	5	14.29	12	18.46
Total	16	100.00	14	100.00	35	100.00	65	100.00

Table 112

Responses to the HEP Parent Questionnaire Item 1 ("Have you heard about the Hawai'i English program?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	4	1	6	3	3
Yes	73	89	76	87	81
No	23	10	19	10	16
N =	107	82	90	106	385

Table 113

Responses to the HEP Parent Questionnaire Item 1 ("Have you heard about the Hawai'i English Program?"): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	5	2	4	3
Yes	71	85	92	81
No	24	13	4	16
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 114

Responses to the HEP Parent Questionnaire Item 2 (a) ("Where did you hear about HEP: from your child?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	33	15	21	21	23
Yes	63	82	71	70	71
No	5	4	8	9	6
N =	107	82	90	106	385

Table 115

Responses to the HEP Parent Questionnaire Item 2 (a) ("Where did you hear about HEP: from your child?"): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	29	20	14	23
Yes	62	74	84	71
No	10	6	2	6
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 116

Responses to the HEP Parent Questionnaire Item 2 (b) ("Where did you hear about HEP: from your neighbors?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	74	70	67	60	68
Yes	10	22	13	25	17
No	16	9	20	15	15
N =	107	82	90	106	385

Table 117

Responses to the HEP Parent Questionnaire Item 2 (b) ("Where did you hear about HEP: from your neighbors?"): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	71	59	72	68
Yes	12	25	16	17
No	17	15	11	15
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 118

Responses to th[illegible]P Parent Questionnaire Item 2 (c) ("Where did you hear about HEP: from PTA?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	73	59	67	57	64
Yes	14	13	14	31	23
No	13	9	19	12	13
N =	107	82	90	106	385

Table 119

Responses to the HEP Parent Questionnaire Item 2 (c) ("Where did you hear about HEP: from PTA?"): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	71	56	74	64
Yes	16	28	9	23
No	13	15	16	13
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 120

Responses to the HEP Parent Questionnaire Item 2 (d) ("Where did you hear about HEP: from teachers [not a part of PTA]?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	59	49	63	43	54
Yes	33	43	20	42	35
No	8	9	17	14	12
N =	107	82	90	106	385

Table 121

Responses to the HEP Parent Questionnaire Item 2 (d)

("Where did you hear about HEP: from teachers [not a part of PTA]?"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	63	46	48	54
Yes	21	43	45	35
No	16	11	7	12
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 122

Responses to the HEP Parent Questionnaire Item 2 (e)

("Where did you hear about HEP: from principal [not a part of PTA]?"):

Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	80	80	76	71	77
Yes	6	7	6	8	7
No	14	12	19	21	17
N =	107	82	90	106	385

Table 123

Responses to the HEP Parent Questionnaire Item 2 (e)

("Where did you hear about HEP: from principal [not a part of PTA]?"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	79	75	74	77
Yes	5	7	9	7
No	16	18	16	17
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 124

Responses to the HEP Parent Questionnaire Item 2 (f) ("Where did you hear about HEP: newspaper, radio, or other mass media?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	62	61	54	53	57
Yes	25	37	34	36	33
No	13	2	11	11	10
N =	107	82	90	106	385

Table 125

Responses to the HEP Parent Questionnaire Item 2 (f)

("Where did you hear about HEP: from the newspaper, radio or other mass media?"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	64	56	49	57
Yes	25	34	43	33
No	12	10	8	10
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 126

Responses to the HEP Parent Questionnaire Item 3 ("Have you ever visited the HEP program in your child's class?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	18	9	14	13	14
Yes	37	52	38	48	44
No	45	39	48	39	43
N =	107	82	90	106	385

Table 127

Responses to the HEP Parent Questionnaire Item 3

("Have you ever visited the HEP program in your child's class?")

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	15	15	9	14
Yes	33	50	55	44
No	52	35	36	43
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 128

Responses to the HEP Parent Questionnaire Item 4 (a) ("My child likes school --"):

Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	7	1	1	6	4
A lot	67	70	70	59	66
Some	25	29	29	32	29
Very little	1	0	0	3	1
N =	107	82	90	106	385

Table 129

Responses to the HEP Parent Questionnaire Item 4 (a) ("My child likes school --"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	4	2	4	4
A lot	67	63	66	66
Some	27	33	30	29
Very little	1	2	0	1
N =	146	123	96	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 130

Responses to the HEP Parent Questionnaire Item 4 (b) ("My child reads --"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	15	15	8	7	11
A lot	35	35	40	37	37
Some	45	41	42	48	44
Very little	6	9	10	8	8
N =	107	82	90	106	385

Table 131

Responses to the HEP Parent Questionnaire Item 4 (b) ("My child reads --"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	16	5	9	11
A lot	32	40	43	37
Some	42	50	40	44
Very little	10	6	8	8
N =	146	123	98	385 *

* The total N (all districts includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 132

Responses to the HEP Parent Questionnaire Item 4 (c) ("My child talks about language work --"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	17	17	12	9	14
A lot	19	13	11	17	15
Some	36	41	39	41	39
Very little	28	28	37	33	31
N =	107	82	90	106	385

Table 133

Responses to the HEP Parent Questionnaire Item 4 (c) ("My child talks about language work --"): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	18	7	14	14
A lot	16	15	13	15
Some	35	42	43	39
Very little	30	36	30	31
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 134

Responses to the HEP Parent Questionnaire Item 5

("Which part of the language program does your child like best? Please check only one."):

Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	1	5	3	1	2
Handwriting	9	12	7	14	11
Listening	2	2	6	1	3
Reading	33	32	32	48	37
Typing	23	13	23	10	18
Having stories read to him/her	5	6	6	3	5
Playing literature games	9	10	6	5	7
Language systems	4	4	2	2	3
I don't know	7	5	11	15	10
Multiple responses	7	11	4	1	6
N =	107	82	90	106	385

Table 135

Responses to the HEP Parent Questionnaire Item 5

("Which part of the language program does your child like best? Please check only one."):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	2	4	0	2
Handwriting	11	12	8	11
Listening	3	2	3	3
Reading	33	39	41	37
Typing	16	20	15	18
Having stories read to him/her	3	4	8	5
Playing literature games	8	7	8	7
Language systems	3	2	3	3
I don't know	12	7	10	10
Multiple responses	8	4	3	6
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 136

Responses to the HEP Parent Questionnaire Item 6 ("Which part of the language program does your child like least?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	4	6	3	2	4
Handwriting	18	24	23	19	21
Listening	3	2	1	7	3
Reading	8	7	8	3	6
Typing	6	6	6	11	7
Having stories read to him/her	9	7	9	13	10
Playing literature games	8	4	3	4	5
Language systems	1	5	14	8	7
I don't know	37	33	28	3	33
Multiple responses	6	5	4	0	4
N =	107	82	90	106	385

Table 137

Responses to the HEP Parent Questionnaire Item 6 ("Which part of the language program does your child like least?"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	5	5	1	4
Handwriting	15	22	29	21
Listening	4	4	1	3
Reading	9	4	5	6
Typing	8	8	7	7
Having stories read to him/her	8	9	15	10
Playing literature games	5	5	3	5
Language systems	6	9	6	7
I don't know	35	33	30	33
Multiple responses	5	2	3	4
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 138

Responses to the HEP Parent Questionnaire Item 7

("If you have older children who have not been in HEP, do you wish they had HEP?"):

Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	4	10	7	4	6
Yes	43	38	41	35	39
No	14	11	11	20	14
I don't know	14	12	18	22	17
I don't have older children	25	29	22	20	24
Multiple responses	0	0	1	0	0
N =	107	82	90	106	385

Table 139

Responses to the HEP Parent Questionnaire Item 7

("If you have older children who have not been in HEP, do you wish they had HEP?"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	4	7	5	6
Yes	51	36	28	39
No	10	18	14	14
I don't know	16	16	18	17
I don't have older children	18	24	35	24
Multiple responses	1	0	0	0
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 140

Responses to the HEP Parent Questionnaire Item 7

("If you have older children who have not been in HEP, do you wish they had HEP?") by parents not selecting option #4 ("I don't have older children."):

Proportion choosing each option by District

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	5	14	9	5	8
Yes	56	53	54	44	52
No	15	16	14	25	19
I don't know	19	17	23	27	21
N =	80	58	69	85	292

Table 141

Responses to the HEP Parent Questionnaire Item 7

("If you have older children who have not been in HEP, do you wish they had HEP?") by parents not selecting option #4 ("I don't have older children."):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	5	9	8	8
Yes	63	47	42	52
No	13	23	22	19
I don't know	19	21	28	21
N =	118	94	64	292 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 16 than the sum of the N's of the 3 SES categories.

Table 142

Responses to the HEP Parent Questionnaire Item 8

("How do you feel about starting to teach skills like reading, listening, speaking, writing, or typing to kindergarten students?"):

Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	2	1	7	0	2
I like the idea	75	82	80	75	77
I don't like the idea	8	11	3	10	8
I don't feel one way or the other	14	6	10	14	11
Multiple responses	1	0	0	1	0
N =	107	82	90	106	385

Table 143

Responses to the HEP Parent Questionnaire Item 8

("How do you feel about starting to teach skills like reading, listening, speaking, writing, or typing to kindergarten students?"):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	3	3	0	2
I like the idea	76	75	81	77
I don't like the idea	7	11	7	8
I don't feel one way or the other	14	11	11	11
Multiple responses	1	0	1	0
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 144

Responses to the HEP Parent Questionnaire Item 9 ("What do you think of the HEP report card?"): Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	14	4	11	3	8
I cannot understand it	16	20	28	25	19
I can understand it but it doesn't tell me what I want to know	33	40	27	36	34
I can understand it and it tells me what I want to know	36	37	44	37	38
Multiple responses	1	0	0	0	0
N =	107	82	90	106	385

Table 145

Responses to the HEP Parent Questionnaire Item 9 ("What do you think of the HEP report card?"): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	8	7	10	8
I cannot understand it	21	20	18	19
I can understand it, but it doesn't tell me what I want to know	29	37	38	34
I can understand it and it tells me what I want to know	42	37	34	38
Multiple responses	1	0	0	0
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 146

Responses to the HEP Parent Questionnaire Item 10

("What is your general opinion of the program? Check one.")

Proportion choosing each option by district

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
No response	4	5	8	0	4
I think it is an excellent program for my child	56	56	53	52	54
I think it is about the same as most other programs for my child	8	12	8	8	9
I think it is a poor program for my child	5	6	0	8	5
I don't know enough about it to decide	26	20	31	31	27
Multiple responses	1	0	0	0	0
N =	107	82	90	106	385

Table 147

Responses to the HEP Parent Questionnaire Item 10 ("What is your general opinion of the program" Check one."): Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
No response	3	5	4	4
I think it is an excellent program for my child	62	47	49	54
I think it is about the same as most other programs for my child	5	14	17	9
I think it is a poor program for my child	2	9	6	5
I don't know enough about it to decide	27	25	30	27
Multiple responses	1	0	0	0
N =	146	123	98	385 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 18 than the sum of the N's of the 3 SES categories.

Table 148

Responses to the HEP Parent Questionnaire Item 10

("What is your general opinion of the program?")

Analysis by district*

	Honolulu	Windward	Central	Leeward	Total
$\bar{X}$	2.00	1.80	1.93	2.19	1.99
Mdn	1.33	1.50	1.29	0.96	1.35
S.D.	1.51	1.26	1.45	1.35	1.41
R	1-4	1-4	1-4	1-4	1-4
N	107	82	90	106	385

*Numeric weights are inversely related to parents' general opinion.

The category of response "I don't know enough about it to decide" is given a score of 4 in this table. Because this erroneously weights the average (in a negative direction), the responses are calculated with those giving this response deleted from the sample. These results are given in Table 152.

Table 149

Response to the HEP Parent Questionnaire Item 10
("What is your general opinion of the program?")
Analysis by socio-economic status*

	Low	Medium	High
$\bar{X}$	1.94	2.02	2.08
Mdn	1.26	1.46	1.38
S.D.	1.48	1.33	1.38
R	1-4	1-4	1-4
N	146	123	98

*Numeric weights are inversely related to parents' general opinion.

The category of response "I don't know enough about it to decide" is given a score of 4 in this table. Because this erroneously weights the average (in a negative direction), the responses are calculated with those giving this response deleted from the sample. These results are given in Table 153.

Table 150

Responses to the HEP Parent Questionnaire Item 10

("What is your general opinion of the program?") by parents not selecting option #4 ("I don't know enough to decide."):

Proportion choosing each option by district.

Option	Honolulu	Windward	Central	Leeward	Total (All districts)
I think it is an excellent program for my child	81	74	87	75	79
I think it is about the same as most other programs for my child	12	16	13	12	13
I think it is a poor program for my child	7	10	0	12	8
N =	74	62	55	73	264

Table 151

Responses to the HEP Parent Questionnaire Item 10

("What is your general opinion of the program?") by parents not selecting option 4 ("I don't know enough to decide."):

Proportion choosing each option by socio-economic status.

Option	Low	Medium	High	Total (All districts)
I think it is an excellent program for my child	90	67	74	79
I think it is about the same as most other programs for my child	7	20	17	13
I think it is a poor program for my child	3	13	9	8
N =	101	86	65	264 *

* The total N (all districts) includes those parents whose SES was unknown. Therefore, the total N (all districts) is greater by 12 than the sum of the N's of the 3 SES categories.

Table 152

Responses to the HEP Parent Questionnaire Item 10 ("What is your general opinion of the program?") by parents not selecting option #4 ("I don't know enough to decide.")

Analysis by district*

	Honolulu	Windward	Central	Leeward	Total
$\bar{X}$	1.26	1.35	1.13	1.40	1.28
Mdn	1.12	1.39	1.07	1.16	1.13
S.D.	.57	.65	.33	.69	.60
R	1-3	1-3	1-2	1-3	1-3
N	74	62	55	73	264

*Numeric weights are inversely related to parents' general opinion.

Table 153

Responses to the HEP Parent Questionnaire Item 10 ("What is your general opinion of the program?") by parents not selecting option #4 ("I don't know enough to decide.")

Analysis by socio-economic status *

	Low	Medium	High
$\bar{X}$	1.13	1.45	1.35
Mdn	1.05	1.24	1.23
S.D.	.41	0.71	1.35
R	1-3	1-3	1-3
N	101	86	65

* Numeric weights are inversely related to parents' general opinion.

Table 154

Major categories of responses to HEP Parent Questionnaire Item 11 ("Do you have other comments on HEP?")

	Parent Response	Freq.	%
1.	Favors HEP in most ways	20	20.20
2.	Doesn't understand HEP	13	13.13
3.	Wants changes in HEP report card	11	11.11
4.	Thinks HEP needs more emphasis on basic language skills	8	8.08
5.	Does not favor HEP in most ways	7	7.07
6.	Thinks HEP is valuable only for some students	7	7.07
7.	Has an ambivalent attitude towards HEP	5	5.05
8.	Concerned about transition of child to non-HEP programs in later grades	5	5.05
9.	Other	18	18.18
	Total number of responses	99	100.00%

Figure 1

Regression of Socio-economic Status and Degree-of-Implementation for 15 HEP Classrooms (Outlier Removed) (r= -.07, not significantly different from 0 at the .05 level)

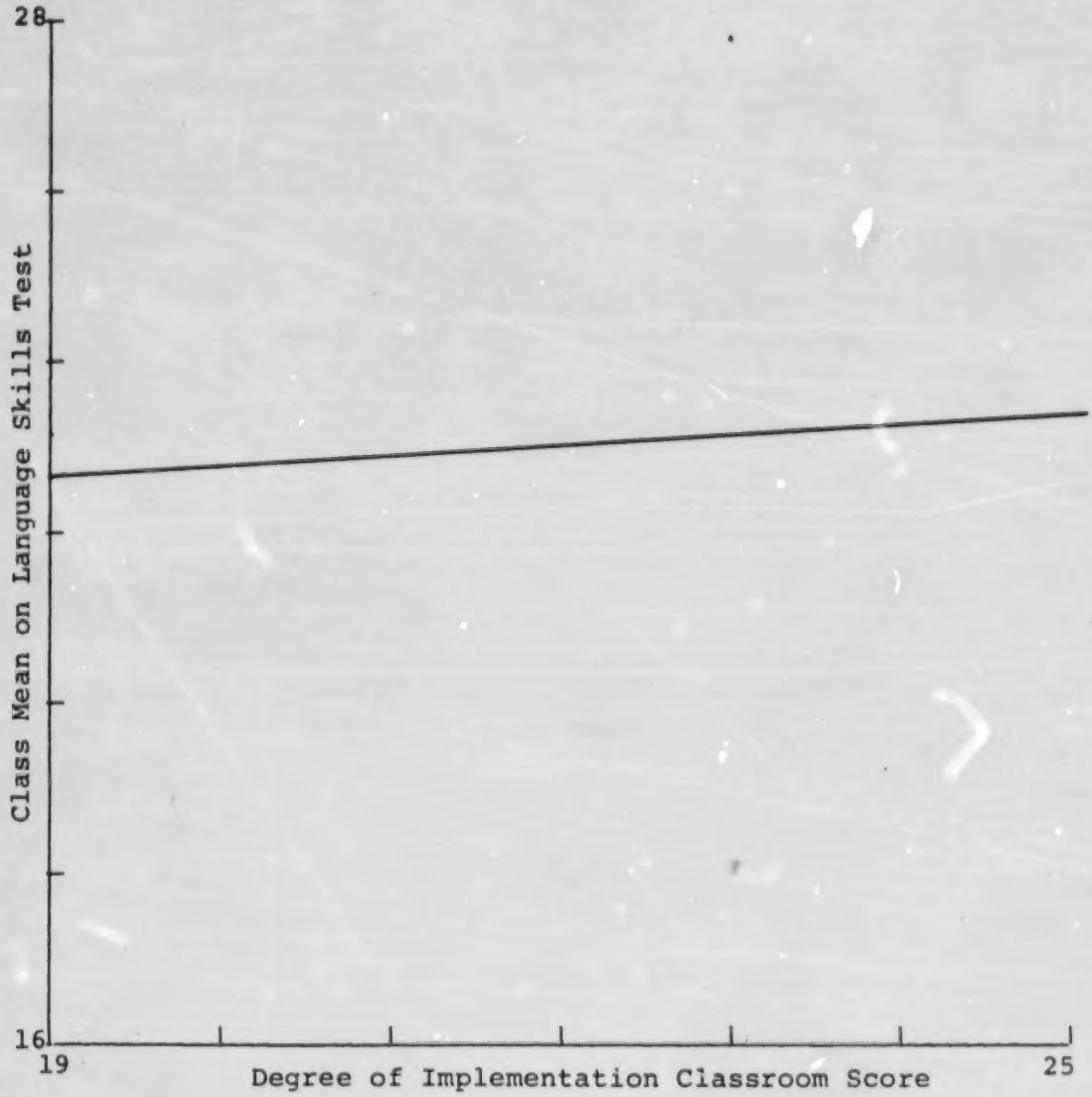

Figure 2

Regression of Language Skills Test and Degree of Implementation for 15 HEP Classrooms (Outlier Removed)

(r= .08, not significantly different from 0 at the .05 level)

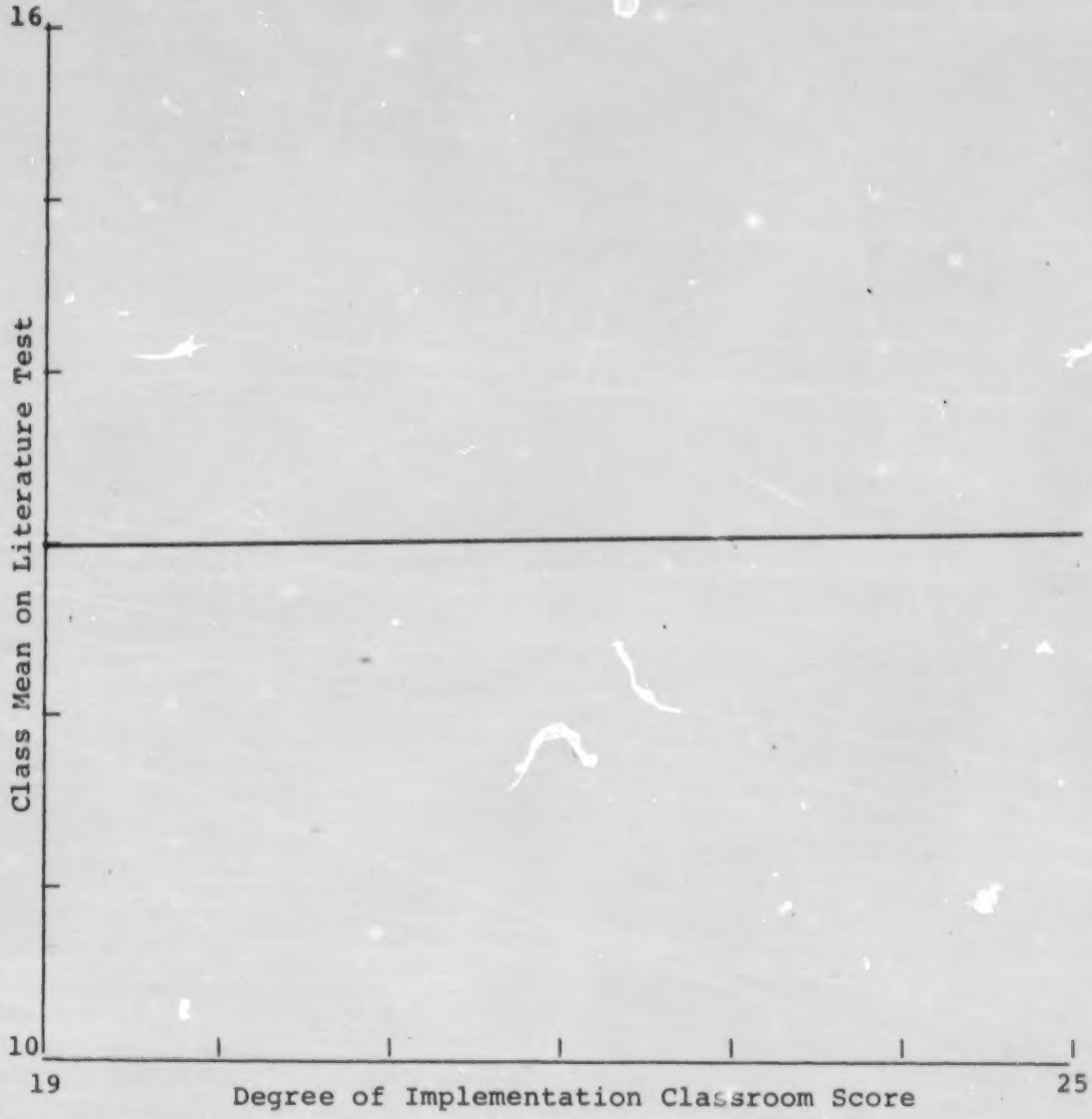

Figure 3

Regression of Literature Test and Degree

of Implementation for 15 HEP Classrooms (Outlier Removed)

(r= .02, not significantly different from 0 at the .05 level)

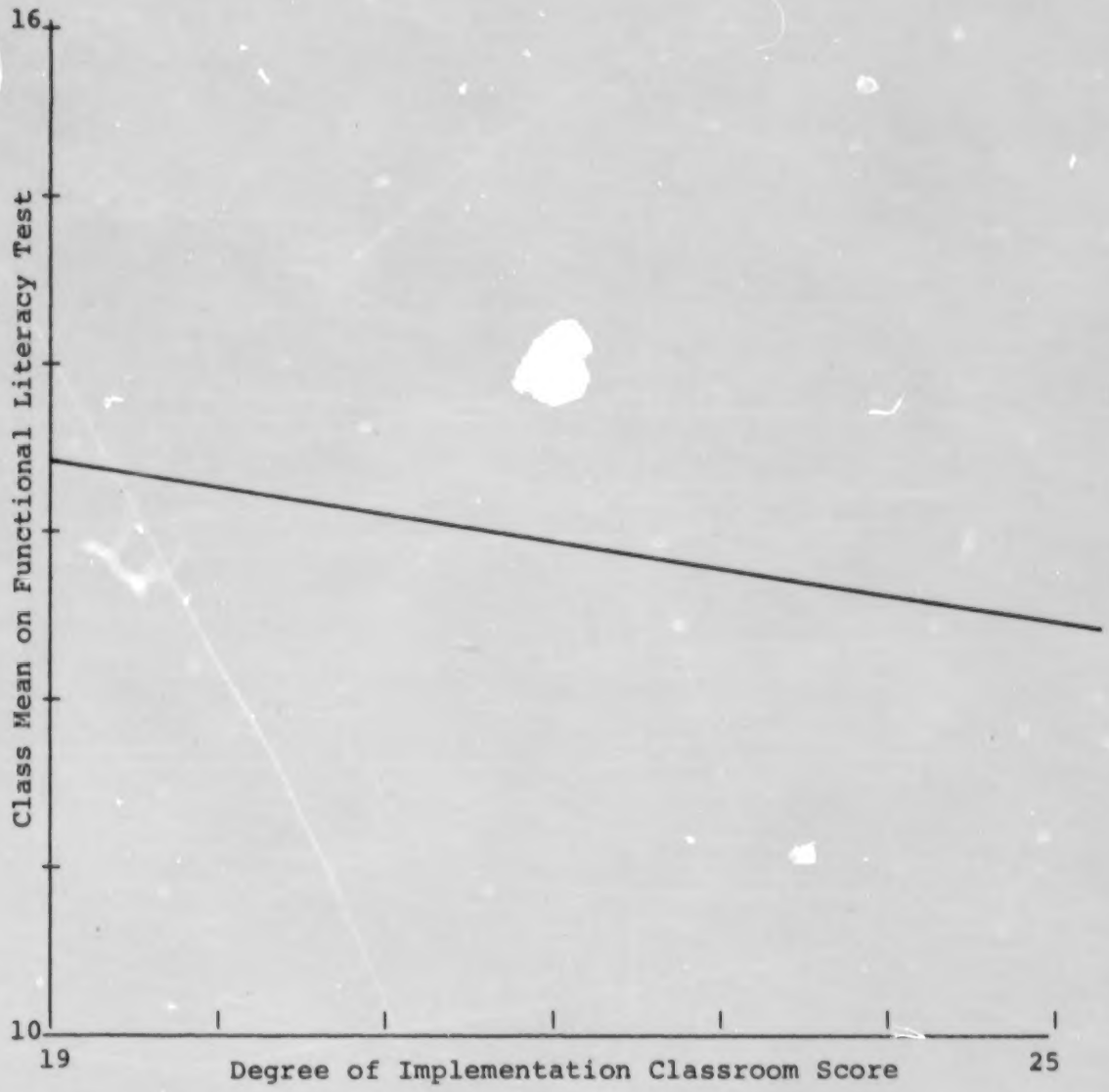

Figure 4

Regression of Functional Literacy Test and Degree of Implementation for 15 HEP Classrooms (Outlier Removed)

(r= -.13, not significantly different from 0 at the .05 level)

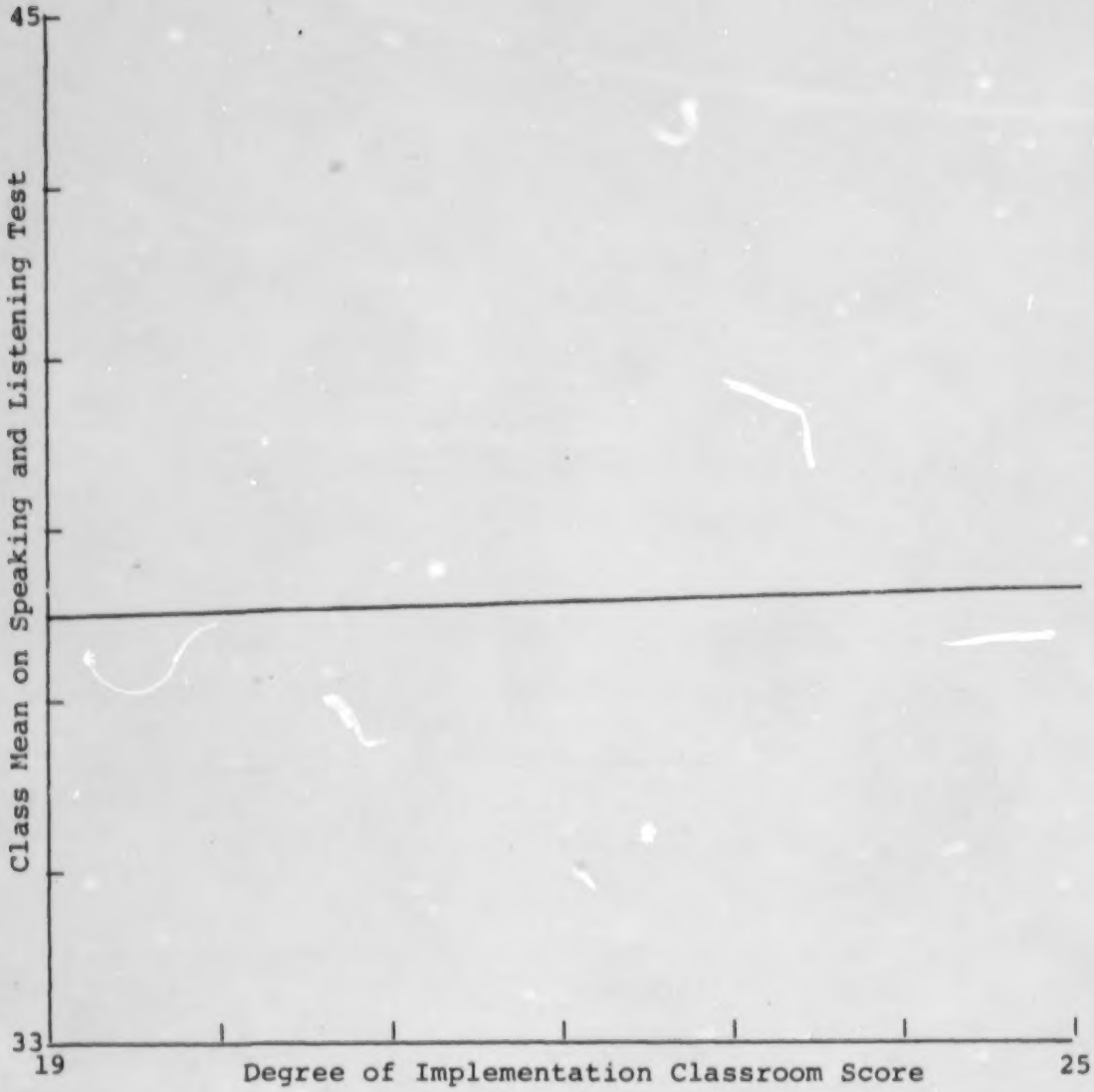

Figure 5

Regression of Speaking and Listening Test and Degree of Implementation for 15 HEP Classrooms (Outlier Removed) (r= .06, not significantly different from 0 at the .05 level)

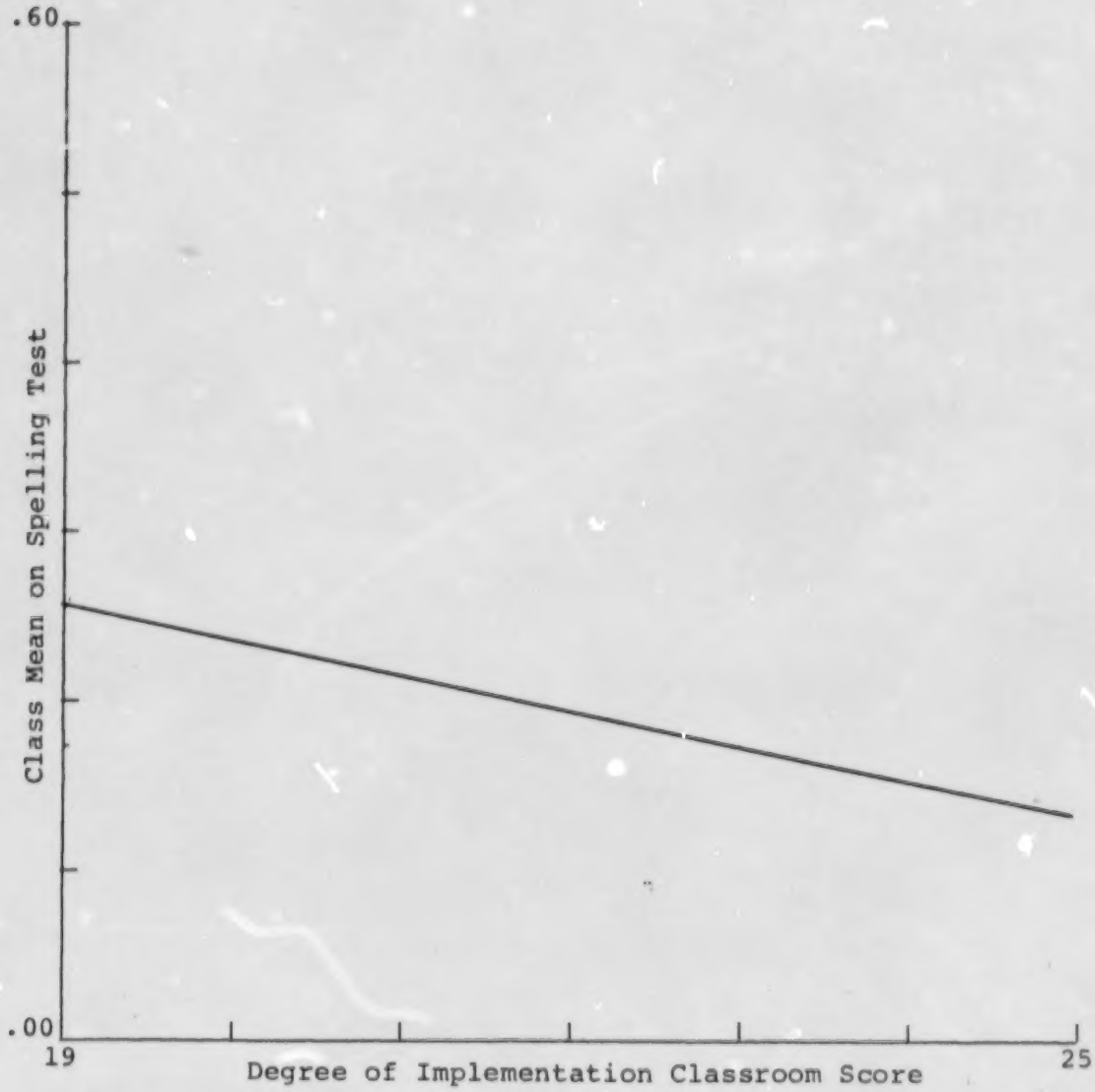

Figure 6

Regression of Spelling Test and Degree of Implementation for 15 HEP Classrooms (Outlier Removed)

(r= -.30, not significantly different from 0 at the .05 level)

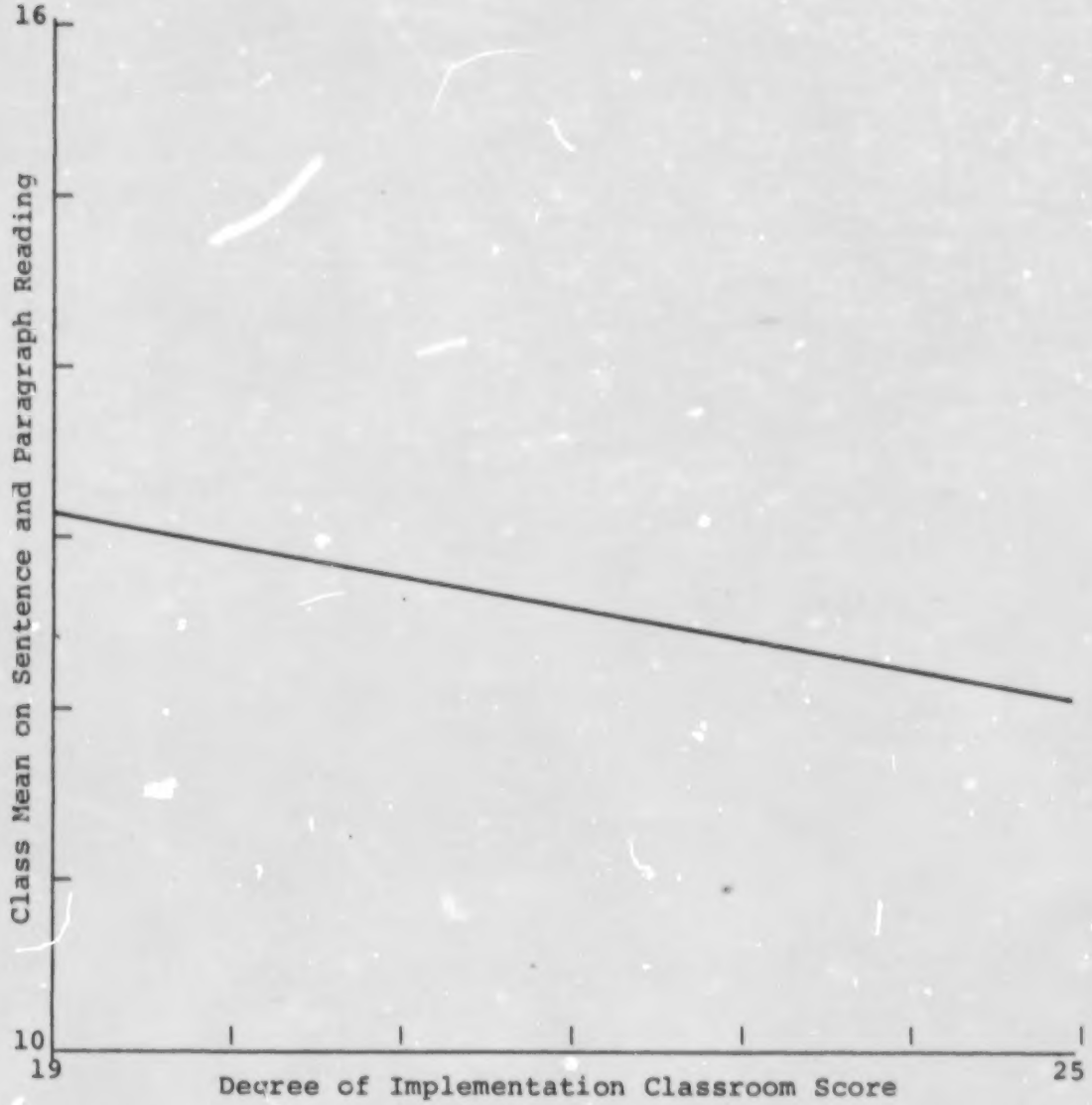

Figure 7

Regression of Sentence and Paragraph Reading Test and Degree of Implementation for 15 HEP Classrooms (Outlier Removed) (r= -.11, not significantly different from 0 at the .05 level)

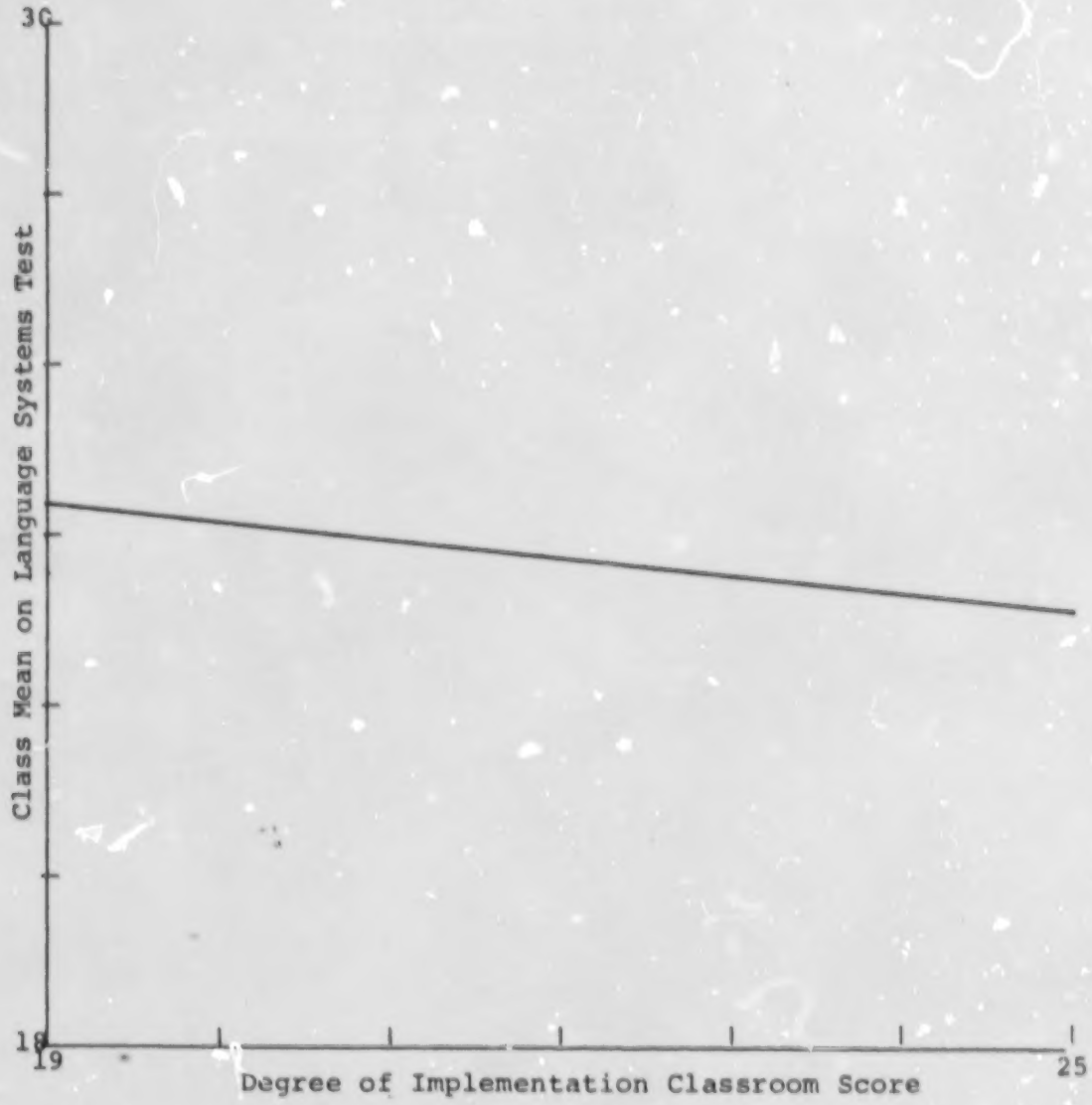

Figure 8

Regression of Language Systems Test and Degree of Implementation for 15 HEP Classrooms (Outlier Removed) (r= -.08, not significantly different from 0 at the .05 level)

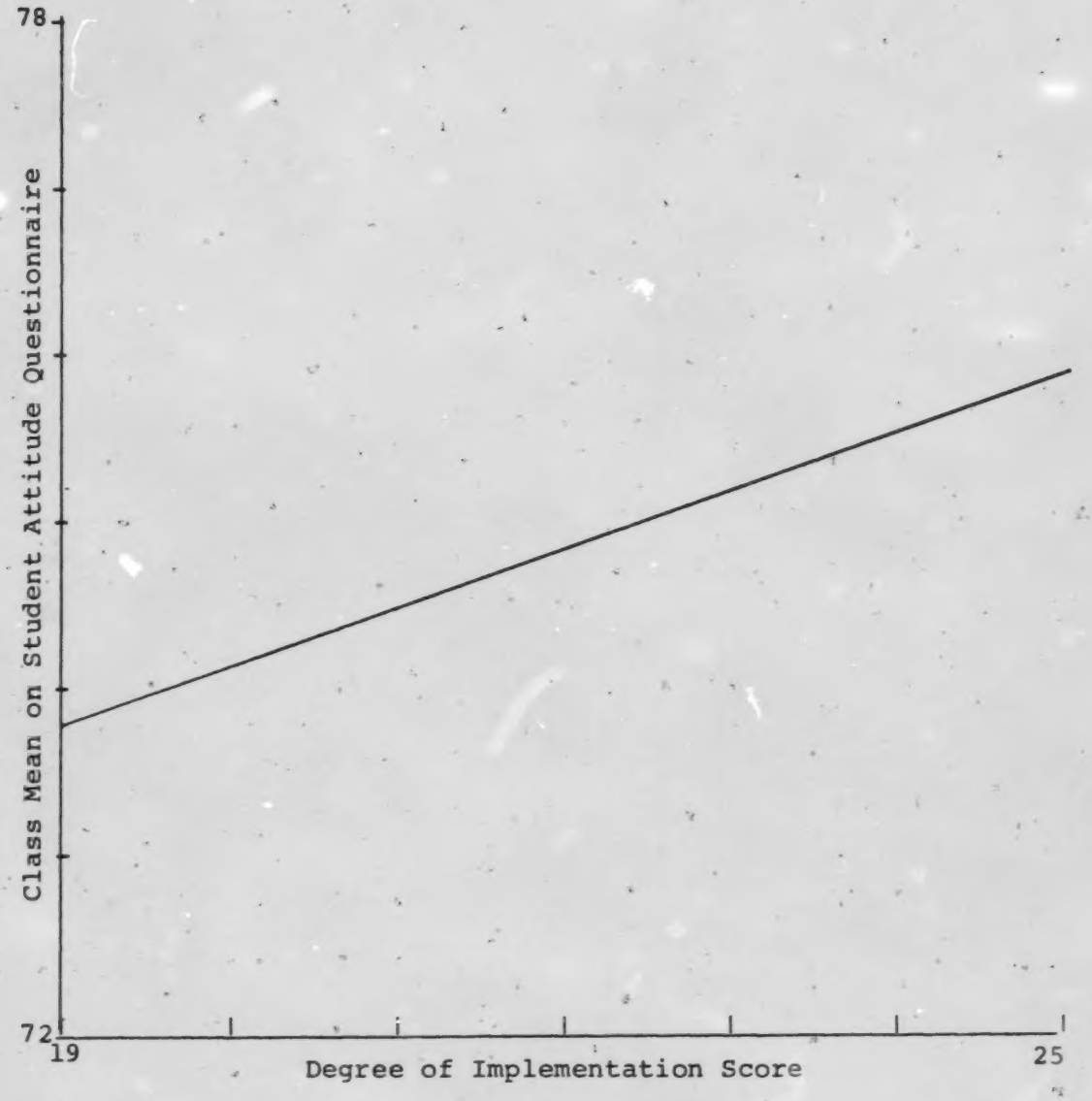

Figure 9

Regression of Student Attitude Questionnaire and Degree of Implementation for 15 HEP Classrooms (Outlier Removed) (r= .26, not significantly different from 0 at the .05 level)

Table 155

Number of Years in HEP

Analysis by District

	Honolulu	Windward	Central	Leeward	Total
$\bar{X}$	3.70	4.50	4.53	4.92	4.36
Mdn	4.25	4.77	5.40	5.78	4.97
S.D.	1.82	1.49	1.84	1.83	1.80
R	1-6	1-6	1-6	1-6	1-6
N	97	82	74	73	326

Table 156

Number of Years in HEP

Analysis by Socio-economic Status

	Low	Medium	High
$\bar{X}$	4.23	4.58	4.37
Mdn	4.78	5.17	4.94
S.D.	1.77	1.82	1.81
R	1-6	1-6	1-6
N	118	109	84

V. DISCUSSION

This discussion will address six questions:

1. How useful are the various measures used in this study?
2. What can be said about student performance?
3. What about student attitudes?
4. What about teacher attitudes?
5. What about parent attitudes?
6. What does observation of HEP classrooms reveal?

1. How useful are the various measures used in this study?

In general, we believe that the measures employed are adequate to serve the purposes of this study. We shall discuss the analysis of each of the measures in turn; there are apparent strengths and defects, but we believe this general conclusion is warranted. It is important to bear in mind that the tests and other instruments are used for curriculum rather than student evaluation. Much less precision of measurement is necessary to assess the performance of groups than individual students.

A. The measure of socio-economic status.

This is a crude, widely-used, index based on the long-studied socio-economic hierarchy of occupational categories. Teachers reported that they frequently had to guess about the occupation of their students' parents. However, for the purpose of determining the average socio-economic status of groups of students, it appears to serve well. It should be noted that in each district the average SES of HEP students is substantially lower than the average SES of non-HEP students.

B. Language Skills

(1) Reading Comprehension

The Reading Comprehension sub-test of the Language Skills Test is a 23-item multiple-choice examination. The item difficulties and correlations with total score reported in Table 16 indicate that this test worked well with this sample. Item difficulties range from .25 to .97 and item-total correlations from .22 to .56. The alpha of .81 indicates the scores to be highly reliable (internal consistency). For most pupils the test was easy (average 75% correct).

(2) Purposeful Writing

In this sub-test, pupils are asked to write two letters to friends. The two responses were rated from 0 to 3. The item difficulties, alpha, and item-total correlations reported in Table 21 lead us to conclude that this sub-test functions adequately for the purposes of this study.

(3) Punctuation and Capitalization

In this sub-test, pupils were given 11 sentences to punctuate and capitalize. Responses were scored either correct or incorrect. Though of adequate reliability (alpha = .70), this test was very difficult for the sample tested (average 23% correct). Two of the sentences (#4 and #7) may have been confusing (based on item-total correlations) but in general, the test appears to be adequate (see Table 26). When performance is this low one might question the validity of the test. However,

it is our conclusion that the test is valid and that, as will be discussed later, the actual performance level of both HEP and non-HEP students is low relative to educational expectations.

C. Literature

This test of 15 items (6 variable-scored and 9 multiple-choice) appears to be relatively easy and of adequate reliability, and contains no statistically problematic items. As shown in Table 34, the item difficulties range from .45 to .96, reflecting the relative easiness of the questions. Item-total correlations range from .42 to .70, indicating no particular items that are inconsistent with overall content. The alpha (.73 for variable items and .56 for multiple-choice) indicates that Literature Test scores are of adequate reliability for the purposes of program evaluation.

D. Functional Literacy

The Functional Literacy test was designed to assess the competence of fifth graders in those tasks they might be expected to encounter in their life outside of school. The questions call upon the student to read a bus schedule, a T.V. schedule, signs, a store directory, and so forth. They are also asked to fill out forms and put a return address on an envelope. As Table 39 indicates, all the questions except one (#13) correlate well with total score on the test and are of appropriate difficulty level (ranging from .38 to .91 correct).

The alpha coefficients (.73 and .64) indicate that the test is of adequate reliability (internal consistency).

E. Student Attitudes

This measure, consisting of 25 questions, presents no apparent measurement problem. Each item is scored from one to four, with a maximum possible total score of 100. The responses are generally indicative of favorable (average = 75.46) attitudes toward the language arts program for both HEP and non-HEP students. Item-total correlations are shown in Table 81 and range from .25 to .65. No particular questions seem inconsistent with the general attitude that is assessed. The alpha of .82 is well above the acceptable level of reliability (internal consistency) needed for curriculum study.

F. Speaking and Listening

This test is divided into six sub-tests. The sub-test difficulties and correlations with the total test score are presented in Table 68 . The sub-tests are discussed individually below. Correlations of the sub-tests with the total test range from .11 to .91. Overall, the test is reasonably reliable (alpha = .70), and is not difficult for students (76% correct).

(1) Maps Sub-Test

This sub-test consists of two items in which students are requested to show how to get from one point to another by drawing a line on maps. Difficulties and item-total correlations are shown in Table 44 . The alpha (.44) is not particularly meaningful for a two-item test. The test

was difficult for students: the average number of items correct was 34%.

(2) Questions and Negatives Sub-Test

This sub-test consists of 14 items in which students were asked to change positive statements into negative statements, and change the positive statements into questions. Item difficulties and correlations of items with the total test are shown in Table 48. Except for item 4, the items are easy for students. Item-total correlations range from .28 to .72. The average number of items correct is 74%. The test is highly reliable (alpha = .87).

(3) Phrases Sub-Test

The Phrases sub-test ask students to complete a sentence using a phrase that makes it similar to another sentence read by the examiner. Four such items are included. Analysis of the items is reported in Table 52. Correlations of the individual items with the total test are generally low, and range from .24 to .50. Except for item 4, the test was not difficult for pupils. The average number of correct responses is 71%. The alpha (.54) indicates that the reliability of the test is low.

(4) Multiple Meanings Sub-Test

This sub-test is a multiple-choice examination in which students are asked to choose one of four pictures that best describe a word in a sentence read by the examiner. Item difficulties, ranging from .66 to .99, and item-total correlations, ranging from .09 to .54, are shown in

Table 56. These results show that the test was very easy for students (the average correct is 87%) and that the items were not highly correlated with the total test. The alpha of .66 indicates that the reliability is not high.

(5) Directions Sub-Test

In this sub-test, students are given instructions to point out parts of figures and pictures. Results of the item analysis are given in Table 60. It is noted that the first items are difficult for students, while the last four pose little difficulty for students. Item-total correlations range from .30 to .41. The average number of correct responses is 63%, so that the test is seen to be reasonably difficult. The reliability is not high (.64).

(6) Communications Sub-Test

This is a five item sub-test in which students either describe drawings to the examiner, or listen as the examiner describes a drawing. The examiner then determines, in the first case, if the student adequately describes a drawing to see if the examiner's and student's drawings are different or the same, and then determines, in the second case, if the student can tell from the examiner's description if the two drawings are different or the same. Item difficulties and item-total correlations are shown in Table 64. Because the item difficulties range from .97 to 1.00, and because there is almost no item-total correlation (r = .01 to .24), the test is seen to be of

little value. This is further shown in the average of correct responses per student (98%) and the low alpha (.21).

G. Sentence and Paragraph Reading (Oral)

This test attempts to determine how well students can read short sentences and paragraphs. It consists of 20 items that are analyzed in Table 73. Item difficulties are seen to range from .48 to .89, and the correlation of individual items with the total test ranges from .39 to .77. The test is of reasonable difficulty (average number of correct responses is 63% and of high reliability (alpha = .93).

H. Spelling

This test consists of 66 words administered in six blocks. The examiner read sentences to the students in which the word to be spelled was included, and ceased administration of the test when a student misspelled five or more words in a block. The number of points a student received was the number of blocks the student completed. Because the test was scored on the "highest-block" basis, the item-total correlation is not meaningful, and no conventional determination of reliability was feasible. However, this test correlates with others to a degree that it seems reasonable to infer that it is of adequate reliability and validity. The average number of blocks credited (of the six possible) was 3.1 .

I. Language Systems

The Language Systems Test is a 13-item examination. Item difficulties and the item-total correlation are reported in Table 77. The possible number of points for item 4 is ten; the possible number for item 5 is five; for item 6 is 11; for item 7 is four; for item 12 is four; and the possible number of points for item 13 is ten. Item-total correlations indicate that four of the 13 items (No's. 1, 8, 9, and 11) are of marginal value. The alpha (.48) shows that the test is not highly reliable. Overall, the test was fairly difficult for the students in the sample. The pilot-test of the final version of this exam (report in Supplement A) indicates considerably higher reliability (alpha = .86) and better item performance. It appears that revisions, intended to improve the test, actually weakened it.

The intercorrelation of each group test with every other group test is reported in Table 14. The intercorrelation of the individually-administered tests is given in Table I5.

2. What can be said about student performance?

The results reported are strongly influenced by the socio-economic status of the students. This strong relationship (between achievement and SES) has been almost universally observed in every major study of educational achievement in recent years. Though the sampling plan employed in this study stratified schools by SES, it was not possible (and probably not desirable) to stratify students in the sample-selection process. The HEP students sampled have a lower SES average than do the

non-HEP students in our sample. It seems likely that this reflects the actual population of students on O'ahu. The SES distribution of our sample is summarized in Table 13. Interpretation of the achievement and attitude measures must reflect the strong influence of SES and the difference on this variable between the two curriculum groups.

A. Language Skills

(1) Reading Comprehension Sub-Test

To the extent that the Reading Comprehension Test is a valid reflection of the educational objectives for Hawai'i's fifth-grade students, we conclude that performance level is generally high in this skill. On the average about 75% of the questions were answered correctly by the total sample tested. The results displayed in Tables 16 - 20 indicate this high level of performance occurs across districts and SES levels.

On the average, after taking SES differences into account, students in the HEP classrooms demonstrate a higher degree of proficiency in reading comprehension than students in non-HEP classrooms. This pattern is evident in both the total score and individual-item tables. Though on particular items, in particular SES categories, the non-HEP pupils do better, the clear trend (about 4 items to 1) is in favor of the HEP curriculum (see Table 20). The covariance-adjusted means show an educationally-significant difference, in favor of HEP, in pupil performance.

Among districts, performance on reading comprehension seems highest in the Windward District and lowest in the Central District.

(2) Purposeful Writing Sub-Test

On this subject, the HEP students in the low and high SES categories perform higher than their non-HEP counterparts. In the middle SES category, the non-HEP students achieve a higher average score. These results are summarized in Tables 21 - 25. These differences are generally small, however, and may be of limited educational significance.

(3) Punctuation and Capitalization Sub-Test

The student performance on this sub-test is generally low. If the questions adequately embody educational objectives (and they seem to) we must conclude that O'ahu fifth graders do not meet expectations. As reported in Tables 26 - 30, differences between HEP and non-HEP groups on this examination are varied and small. The performance level is generally so low that no educationally-significant difference among groups (SES or districts) are apparent.

(4) Language Skills Total Score

Examination of Tables 31 - 33 will justify the conclusion, we believe, that children in HEP classes have attained higher average language skills than those in non-HEP classes. This difference is most apparent in Reading Comprehension. Though these observed differences may not

seem dramatic, they are large enough to be educationally-significant in our opinion. Given the strong effect on achievement of SES and other non-curricular influences, one could not expect dramatic differences in achievement attributable solely to curriculum. However, within the range of potential curriculum influence on test scores, HEP does appear consistently to exert a more favorable impact on language skills achievement than the non-HEP curriculum.

B. Literature

The results from the Literature Test given in Tables 34 - 38 present a mixed picture. At the low and high SES levels no differences between HEP and non-HEP average total scores of educational significance are apparent. However, at the middle SES level, the student in HEP classes appear to out-perform those non-HEP counterparts. This pattern is particularly apparent in Table 38 that contains the item-by-item results. We would conclude that for students in the mid-SES range, the HEP curriculum produces higher scores on the average than the non-HEP classes. We can find no apparent pattern in the type of questions favoring one curriculum over the other.

C. Functional Literacy

Reflecting the varied content of this test, Tables 39 - 43 present a mixed picture of curricular influence. In general, though not at low SES level, the students in HEP classes seem

to perform slightly better on this examination then non-HEP students. This difference is more pronounced at the middle SES level.

HEP students seem, in particular, to be able to use the yellow pages of the telephone directory better than non-HEP students. It is difficult to find similar patterns for other clusters of items.

D. Speaking and Listening

(1) Maps Sub-Test

Tables 44 - 47 indicate that HEP students generally performed better on this sub-test than non-HEP students.

(2) Questions and Negative Sub-Test

No educationally-significant differences in performance, between HEP and non-HEP, are evident on this sub-test (Tables 48 - 51). The covariance-adjusted means are virtually identical.

(3) Phrases Sub-Test

As shown in Tables 52 - 55, no difference between HEP and non-HEP student performance on this sub-test is apparent.

(4) Multiple Meanings Sub-Test

On this subject, as reported in Tables 56 - 59, HEP students appear to perform at a higher level than their non-HEP counterparts. This seems to be a consistent difference - across SES levels and on each of the 15 items on the sub-test.

(5) Directions Sub-Test

On this test there is a moderate trend for HEP students to achieve higher scores than non-HEP students (see Tables 60 - 63). This trend seems strongest at the middle-SES level.

(6) Communication Sub-Test

This test was so easy for all students that its value for program evaluation is doubtful (98% correct responses). For further references, see Tables 64 - 67 .

(7) Speaking and Listening Total Score

As the adjusted means in Table 69 indicate, HEP students, on the average, achieve higher scores on the battery of Speaking and Listening tests. We believe this difference is sufficiently large to be of educational significance.

E. Spelling

HEP students achieve higher spelling scores than non-HEP students (see Tables 70 - 72). In our opinion, this difference is large enough to be of educational significance.

F. Sentence and Paragraph Reading

No difference of substance is evident between HEP and non-HEP students on this test (see Tables 73 - 76).

G. Language Systems

The results from the Language Systems Test are the sole major exception to a clear trend across tests favoring the performance of HEP pupils. At every socio-economic level and

in each district, non-HEP pupils attain higher mean scores than pupils in HEP classes on Language Systems (Tables 77 - 80). The Language Systems Test is not highly reliable and one might expect the impact of the Language Systems curriculum materials to be somewhat less than the rest of HEP (since it is introduced later and probably to a smaller number of pupils). Still, it is hardly to be expected that non-HEP pupils will achieve a higher average score than HEP pupils. Further, nothing in the low correlations between language systems scores and "degree-of-implementation" and "years-in-HEP' can be found to discount the poor performance of the HEP program on this criterion.

H. "Degree-of-Implementation" and "Number-of-Years-in-HEP"

Neither of these measures contributes to an understanding of HEP curriculum effects in our opinion. The observation instrument that yields the "degree-of-implementation" score is seriously flawed in our opinion. We believe it simply lacks validity. In any case, this index only correlates with one test (Spelling) and that one negatively.

"Number-of-years-in-HEP" shows generally low correlation with other measures also. We suspect that the "restriction of range" (1-6 years) phenomenon accounts for this to a large extent.

3. What about student attitudes?

The results from the Student Attitude Questionnaire are given in Tables 81 - 85 . These attitudes, like the achievement scores, are cor-

related with SES. Consequently, interpretation of the results should be careful to take these influences into account.

In the low SES category there is no apparent difference in attitude toward language arts. In the middle SES category, non-HEP students demonstrate a more favorable attitude toward language arts than do the HEP students. In the high SES category the slight (probably not educationally-significant) difference is in favor of HEP. In three of the four districts the difference is in favor of the non-HEP classes (though this may be a function of SES differences). The adjustment for SES differences shows non-HEP students expressing more favorable attitudes toward their language arts program than HEP students.

Examination of the item results provide a clearer picture, in our opinion. Here we can see a pattern of more favorable attitude toward language arts by non-HEP students. It should be noted that in general, for both curriculum groups, the attitudes of students toward their language arts program are generally favorable (averaging 75.5 out of a 100 maximum possible score).

The Student Interview was administered to 48 HEP students and 71 non-HEP students. The average number of years in the program for HEP students is 4.5 per student. One-third of the non-HEP students say they have taken HEP at some time in the past. The average number of years in HEP for all non-HEP students was .80 years per student.

The only question that is the same on both the HEP and non-HEP Student Interviews involves tutoring. About two out of five pupils interviewed, both HEP and non-HEP, indicate that they like tutoring. About one out of ten non-HEP student responses indicate a dislike of tutoring. No HEP students make this response.

It is possible to make a general comparison between the programs by looking at the items that talk about the things the students like and dislike. There are more responses that give some form of reading as a favored activity than any other language arts component. About one-third of the non-HEP responses concerning what is liked least express opinions such as, the work is "too hard," or "boring," or "there is too much of it." Few students in HEP respond in this manner. About 15% of HEP students say that they would like to change the reading materials to include a wider variety of books. In summary, both HEP and non-HEP pupils express generally favorable attitudes toward their language arts program, and both seem to like the reading component the best.

4. What about teacher attitudes?

A. The teachers' attitude towards the HEP guidelines and curriculum.

Most teachers rate the variety of materials used in HEP favorably. They particularly like the reading materials and audio-visual aids. They also like the individualization of student programs and the use of programmed materials.

B. The teachers' opinion about the success of the program with different types of children.

Teachers indicate that the program is best suited for academically-gifted children. They think it is of no special help to emotionally-disturbed and academically-retarded children. They generally think the program is successful with the average child, and with the child of low socio-economic status. They are less sure, however, about the success of the program with non-English-speaking children. HEP teachers are less likely

than non-HEP teachers to think they need to alter their language arts program.

C. The teachers' opinion about the ways the program helps children learn.

HEP teachers think that the program is generally effective in helping students' interest in learning. They generally report that HEP students are more competent than non-HEP students in selecting their own work. They also think that HEP students are more competent in recording their own progress, in seeking help when necessary, and in operating classroom equipment themselves. They say that HEP students read more books, and a greater variety of books, than non-HEP students. They are unsure if HEP students are better than non-HEP students in cursive writing. Teachers think that tutoring between children is beneficial, and tend to discount a danger of mislearning through peer-tutoring. They believe that HEP students are generally more competent than their non-HEP counterparts in helping each other learn.

D. The teachers' opinion about the effects of HEP on the students' personal development and social skills.

Teachers report that children gain from the opportunity to plan their daily tasks. They are unsure if, due to the program, HEP students have a more positive self-concept than non-HEP students, and are unsure if HEP students are more competent than non-HEP students in oral communication skills with their peers. Nevertheless, the HEP teachers (more than non-HEP teachers) frequently mention in interviews the improvement of their stu-

dents in such skills as "self-direction," and "self-pacing."

E. The teachers' attitude towards their role in HEP.

Teachers believe that the HEP curriculum requires more competence than teaching the regular language arts program. They favorably rate the in-service training for HEP, but think the HEP workshops provide too much material in too short a time. (In contrast, non-HEP teachers are more satisfied with their training.) HEP teachers say that they are now more positive toward HEP than when they first heard about it. They also think they have a better chance to know children as individuals than they do in the non-HEP language arts classes. Generally, most HEP teachers prefer teaching HEP over non-HEP classes, although two out of 13 interviewed prefer to see the program dropped entirely.

5. What about parent attitudes?

The following general comments can be made about the responses of 385 parents (95.3% of the parents in the sample) to the HEP Parent Questionnaire:

A. What the parents know about HEP, how they came to know this, how their child likes school, and what their child likes about language work.

Four out of five parents say they have heard of HEP. The higher the SES group, the more likely they are to have heard of the program. Parents are more likely to have heard of HEP from their child than from any other source. Slightly less than half

the parents have visited their child's class. Again, the higher the SES, the more the parent is likely to have visited the child's HEP class. About three-fourths of the parents report that their child talks about language work only some of the time or very little. However, they affirm that two-thirds of the children like school a lot, while nearly nine out of ten children read a lot or some. Over one-third of the HEP parents say their child likes reading better than all other parts of language studies. One of five parents say their child likes handwriting the least.

B. The parents' attitude toward HEP.

Slightly more than half the HEP parents say they would have liked their older children to have been in HEP. The lower the SES group, the more likely they are to express this preference. Three of four parents say they like the idea of teaching language skills (such as those taught in HEP) to kindergarten students. Only about a third say the HEP report card tells them what they want to know, while the same number of parents say it doesn't tell them what they want to know. One of five parents say they don't understand it at all. Finally, when asked their general opinion of the program as a whole, nearly four out of five of the parents, who know enough about the program to decide, say they think it is an excellent program for their child (with those in the low SES category responding this way the most frequently).

6. What does observation of HEP classrooms reveal?

The HEP classroom observation schedule is used primarily to provide an index of "degree-of-implementation." Each HEP classroom was observed twice, using this instrument. The index is based on the average of both observations. The relation of this index to pupil achievement was discussed earlier. The results of the observations are presented in Table 86.

It would appear that there is considerable variation in activities among the HEP classes. About half used a planning session, about half used an evaluation session, and only about three students per class were observed in peer tutoring.

VI. SUMMARY

It is our opinion that based on the data collected and analyzed, HEP students generally perform better on the achievement measures employed than non-HEP students. The exception to this pattern was the performance of HEP pupils on the Language Systems Test. There are variations in this overall pattern (by SES level and on particular skills) but the general trend seems clear to us. We believe the measures to be adequately valid and reliable. We see no particular bias either in the measures or the sample of pupils in favor of either curriculum category.

Though students generally expressed favorable attitudes toward their language arts studies, the opinions of non-HEP students were, on the average, somewhat more favorable than those of HEP students.

HEP teachers expressed a very favorable attitude toward the curriculum, though they believed that it required more of teachers and that adequate teacher-training was essential to the success of the program. HEP parents, on the whole, expressed opinions supportive of the curriculum. Considerable variation of instructional method was observed in the HEP classrooms.

TABLE 157

SUMMARY OF ACHIEVEMENT TEST RESULTS

Test	Group With The Larger Average Score[1]	Adjusted Group Means		Probability That The Difference Is Due Only To Chance[2]
		HEP	NHEP	
Language Skills	HEP	24.49	23.36	.02
Literature	HEP	13.76	13.39	.28
Functional Literacy	HEP	14.05	13.56	.20
Speaking & Listening	HEP	38.67	37.46	.28
Spelling	HEP	3.44	3.02	.26
Oral Sentence & Paragraph Reading	HEP	13.17	13.14	.97
Language Systems	Non-HEP	24.64	25.65	.04

(1) Adjusted for differences in SES.

(2) Approximate.

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